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ABSTRACT

This two-dimensional, action-oriented curriculum model for teaching geography at the secondary school level provides a rationale for implementing a student-structured, process-oriented curriculum. Two diagrammed models, which are general enough to represent any learning process, illustrate the ideas developed in the rationale and accompany each of the 16 activities presented in the handbook. The first activity uses the classroom as a source of data. These data are later mapped and graphed by students. The concept of culture contact is introduced in activity 2. Activities 3,7,9, and 13 focus on Canada by examining the environment of Canada's native people, using the globe, studying Allisha, and discovering Canadian pride. Activities 4 through 6, word-pictures, use classification, and data identification skills. Activities 8 and 10 deal with natural and unequal resources and activity 11 presents a map simulation exercise. Activity 12 focuses on foreign ownership and activities 14 and 15 help students form an image of the nature of the country or region in which they live. The final activity uses newspapers to teach about cities, towns, and villages. Diagrams, student worksheets, checklists, puzzles, and follow-up sheets are included. Although some activities focus primarily on the study of Canada, many can be used in any geography or social science lesson. Appendices provide instruments for self-evaluation, further information on process-oriented student-structured classrooms, and a word about computer technology in the curriculum. (LH)

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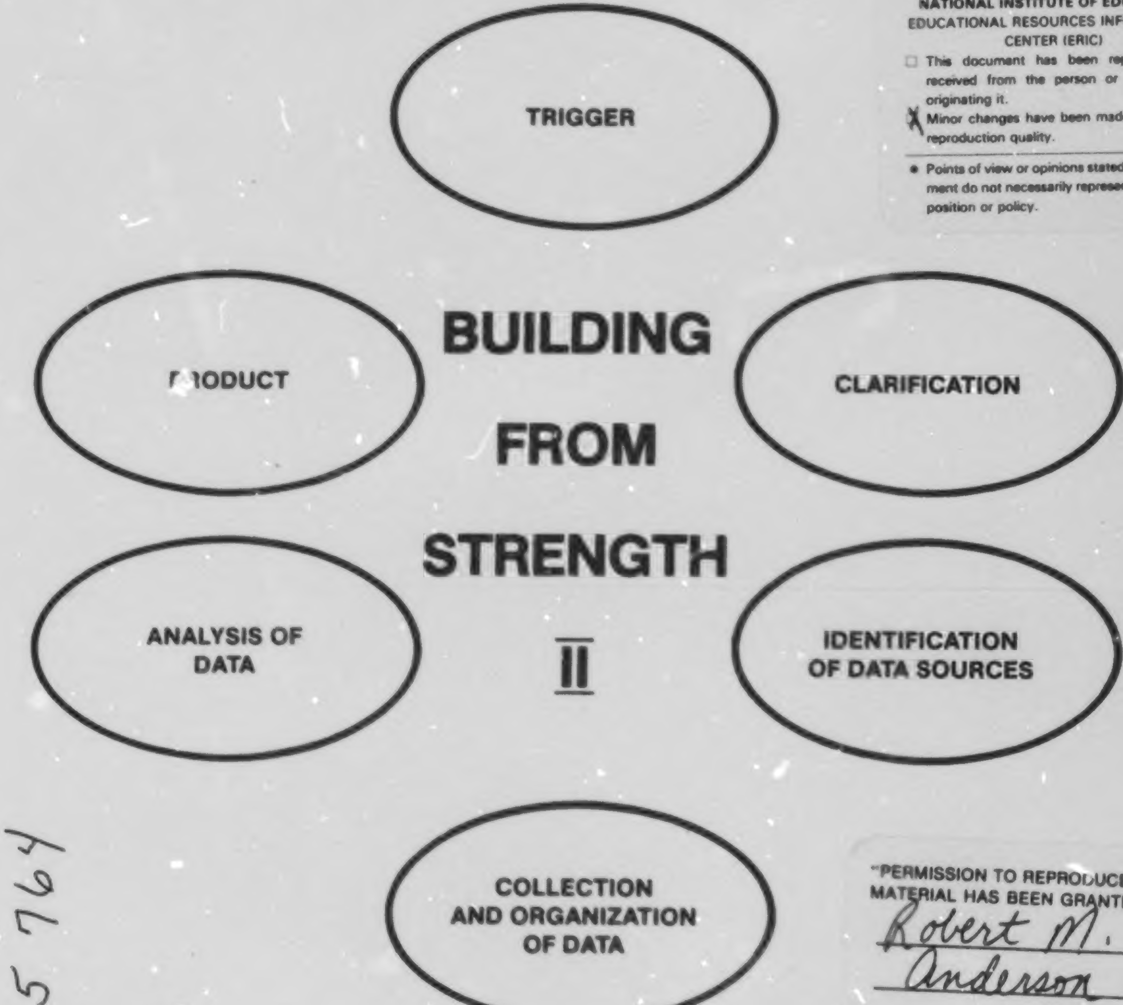
BUILDING FROM STRENGTH

II


TRIGGER

CLARIFICATION

IDENTIFICATION OF DATA SOURCES

COLLECTION AND ORGANIZATION OF DATA

ANALYSIS OF DATA

PRODUCT

SO 015 764

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GENERAL LEVEL CURRICULUM

A JOINT PRODUCT OF

CANADA STUDIES FOUNDATION

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ONTARIO ASSOCIATION FOR
GEOGRAPHIC & ENVIRONMENTAL
EDUCATION

BUILDING FROM STRENGTH

II

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May, 1983

PREFACE

This resource book is the second joint publication of the Ontario Association for Geographic and Environmental Education (OAGEE) and the Canada Studies Foundation (CSF). The first, *Building from Strength,* originated through the impetus provided by the CSF publication *Teaching Canada for the '80s* and because of a concern that students in general level classes needed more effective curriculum materials. The activity-oriented approach outlined in *Building from Strength* was well received by teachers in both Ontario and other parts of Canada. As a result, a second writing team was formed during the summer of 1982 with the objective of building on and expanding those ideas.

The writing of *Building from Strength II* was carried out under the auspices of the curriculum vice-president of OAGEE. Funding for the project was provided by the CSF through the Federal Government's Secretary of State. Consistent with the curriculum objectives of OAGEE, copies of this document are distributed at no additional charge to the membership. Through the regional centres of the CSF, copies are to be distributed across Canada.

Through this and other affiliated projects across the country, the CSF is attempting to foster the development of new curriculum materials and teaching methods in the area of Canadian Studies. By so doing, the CSF hopes to help students obtain a better understanding of the diversity and unity that is the essence of Canadian life.

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RATIONALE

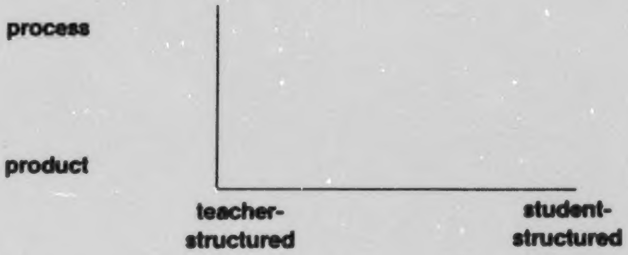
Students in general level classrooms will need to cope with a rapidly changing world. Many of these students will experience numerous job changes throughout their working careers. They will be faced with a data explosion unlike anything experienced in history. Leisure time and its management will become ever more important. The complexity of the world that our students will live in will be far greater than that of their parents. What should a curriculum provide for our students in order that they may cope and function in this world? It is suggested here that such a curriculum, in addition to meeting our geographic objectives, should give to students:

- self-confidence;
- decision making skills;
- the ability to adapt to new situations;
- the competency to cope with change;
- the capability to handle, organize, and interpret large amounts of data.

The authors believe that the curriculum approach outlined in this document will give students the opportunity to develop in the areas mentioned above.

The approach is based upon the two dimensions which are illustrated in Figure 1.

Figure 1



PROCESS:	By process we mean the way in which students in our classrooms arrive at an answer. Data identification, data collection, data organization, and data analysis are examples of steps in the process.
PRODUCT:	By product we mean an outcome or student answer which is the end result of a process. An example of a product might be a written answer, a map that is drawn, a verbal response, etc.
VERTICAL AXIS:	The vertical axis is a continuum which reflects the degree of emphasis placed by the teacher on the process which occurs in the classroom.
TEACHER-STRUCTURED:	In a teacher-structured classroom the teacher maintains control over all steps in the process.
STUDENT-STRUCTURED:	In a student-structured classroom students are given the opportunity to make decisions concerning the process. Students might identify their own data sources, decide on how to organize and analyze the data, and make decisions about the presentation of their answers.

HORIZONTAL AXIS: The horizontal axis is a continuum which reflects the degree to which the teacher allows the students to have input into the process occurring in the classroom.

Each exercise that a teacher designs, each unit of work that he/she uses, each individual's teaching philosophy can be placed somewhere on Figure 1. A number of variables influence where on the diagram a teacher usually operates. These variables would include the objective of the lesson, the personality of the teacher, the size, nature, and grade level of the class, the school administration, the head of the department, etc. Appendix A includes instruments which are designed to help the teacher analyze his/her own teaching and learning styles.

The first dimension involves the extent to which we emphasize process in our classrooms (Figure 1). Ross and Maynes have suggested that perhaps a majority of our students do not receive instruction in the simple thinking skills despite their prominence in Ministry Guidelines.[1] Especially in general level classrooms, product is sometimes stressed more than process. The argument is sometimes presented that students in general level classes have difficulty in thinking logically, in problem-solving, and in decision-making, and, therefore, a higher emphasis should be placed on content or facts than on research skills. **The suggestion here is that the process of arriving at an answer is at least as important as the answer itself.** The process teaches students how to learn. The process can link what appears to be disconnected unique pieces of content. The process is what our students will retain and use long after they have left our classrooms.

> We are, in my view faced with an entirely new situation in education where the goal of education, if we are to survive, is the facilitation of change and learning. The only man who is educated is the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure; that only the process of seeking knowledge gives a basis for security. Changingness, a reliance on process rather than upon static knowledge is the only thing that makes any sense as a goal for education in the modern world.[2]
>
> Specific facts, generalizations, and concepts, regardless of their source, do not, in and of themselves, encourage students to think; do not change prejudices and dispositions; do not develop social and academic skills. These objectives are achieved primarily by the ways in which this basic content is translated into learnable tasks for students in the classroom.[3]

Figure 2 is a model general enough to represent any given learning process that occurs in the classroom. There may be many different routes through the process. Arrows are used in the exercises presented later to illustrate ways in which students might "travel through" the process.

The process begins with a thought trigger. The trigger is often a question posed by the teacher, but it might be an assignment, a problem, a picture, a chart, etc. Often the data can serve as the trigger. The clarification stage allows us to understand the trigger more fully and also to decide upon what we want to do with the trigger; in other words, it points us in a direction. Clarification usually occurs throughout the process. In fact, clarification might not necessarily follow the trigger. You might wish to identify and collect data before deciding on what you wish to do with the trigger. The steps of identifying data, collecting, organizing, analyzing the data, and coming to some type of product or outcome are important components of the process.

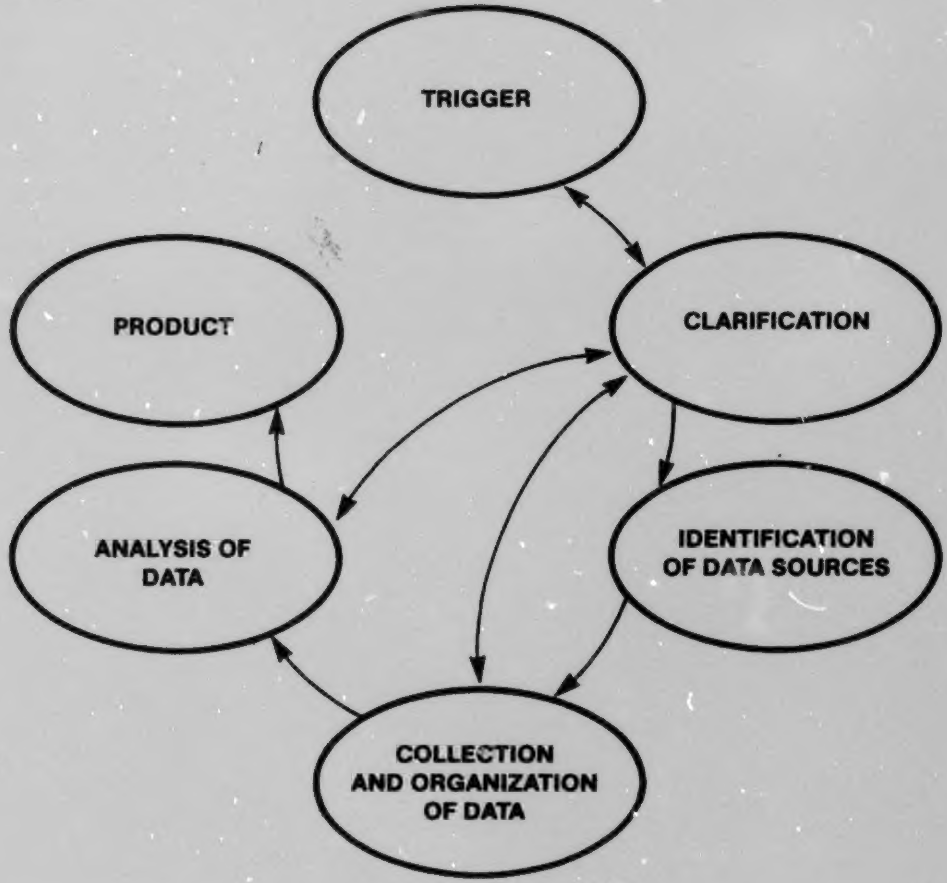
---

[1] Ross, J.A., and Maynes, F. *Geographic Thinking Skills.* Toronto: OISE Press, Informal Series/40, 1981.

[2] Rogers, C.R. "The Person in the Process" in *Humanizing Education.* Washington, D.C.: Association for Supervision and Curriculum Development, 1961.

[3] Fraenkel, J.R., *Helping Students Think and Value-Strategies for Teaching the Social Studies.* Toronto: Prentice-Hall, 1973.

Figure 2


TRIGGER
CLARIFICATION
PRODUCT
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

To be able to work through and with the process outlined in Figure 2, a variety of skills is necessary. The first *Building From Strength* document dealt with a number of these skills, especially those concerned with data organization. The present document also includes exercises designed to allow students to acquire the skills necessary to work with and through the process. In addition, recommendations are made in this document as to ways by which we can introduce, monitor and evaluate process in the classroom (Appendix B). If students are to be made aware of process, it is important that they work with some or all of the techniques outlined in Appendix B.

The second dimension dealt with in this document involves the degree to which students are allowed to have input into and make decisions about the process described in Figure 2. In the past it has been suggested that students in general level classrooms need more structure and direction than their university-bound counterparts. This document suggests that rather than being receptacles of teacher determined content and teacher structured process, students in general level classrooms should be taught the skills and given the independence to allow them to begin to manipulate and work with the process. Not only can this lead to greater student involvement and motivation, but also allows students to develop a degree of independence in problem solving and decision making. Allowing students to make decisions concerning the process in the classroom can also improve the learner's self-image and self-confidence and can lead to a more interesting and enjoyable classroom environment.

Students can be given choices and more freedom at each stage in the process. Students will work with the process in ways which they find most suitable, most fun, most productive. Again, teaching must occur at times when students need to acquire skills to be able to identify their own data sources, collect, organize, and analyse their data, and decide how to present their product or answer. The rewards for both teacher and student are worth it! Simply allowing students a choice in the way in which they present their answer often leads to more involvement and greater motivation. This document includes suggestions on how to move from a teacher-structured to a student-structured classroom (Appendix C).

"Learning activities are experiences designed to involve students in the material at hand. The purpose of much involvement is to encourage students to think about and use the subject matter, to maximize their individual learning, and to stimulate their interest so that school days will be eventually succeeded by self-directed continuing education. While the selection and organization of social studies content serves to impart knowledge, the selection and organization of learning activities facilitates the use of such knowledge. It is through the learning activities by which students become both the spectators and participants in life that they acquire the competencies to assimilate, understand, and work with knowledge."[4]

To summarize, the authors believe the following advantages occur in a student-structured, process-oriented classroom.

(1) Students have the opportunity to develop problem-solving and decision-making skills which they can use throughout their lives.
(2) Students become more involved in the classroom, this leads to greater motivation.
(3) When students realize that they are capable of working with, and manipulating the process, their feelings of self-worth and self-confidence increase.
(4) A greater degree of individualized learning occurs. All students are not asked to proceed at the same rate in the same manner.
(5) A student-structured, process-oriented classroom is often less stressful and more enjoyable for both student and teacher.
(6) Learning ceases to be seen as memorizing or accumulating disconnected content, the process provides a framework for learning.
(7) Students learn how to learn.

"The challenge of designing appropriate education for these students is great — perhaps too great for us even to assimilate, never mind respond to. But really, if we do not start mapping out a curriculum for these citizens of the twenty-first century, who will? The task is immense and there are no textbooks. Perhaps, however, there are thing we can do — slight changes in attitude or orientation that can begin to lead us toward a more satisfactory education for a new age."[5]

Appendix D, written by Jo Ann Wilton from the Peel Board of Education, discusses the ways in which the micro-computer will aid our students to make decisions about, and to understand more fully, their learning process. Available software is outlined and discussed.

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[4] Fraenkel, J.R., *ibid.*

[5] Bentley, R., (from an address given to the Lower Mainland Chapter of the Canadian College of Teachers, British Columbia).

ACTIVITIES

The activities included in this document are presented in the framework illustrated in Figures 1 and 2. Suggestions are made in many of the activities as to ways in which the activities can be altered to move along the two dimensions. Some of the activities in the document are designed to develop skills that students will need in order to function in a less teacher-structured classroom.

A variety of activities, randomly arranged, are included to illustrate the ideas developed in the rationale. This range of activities is intended to help the reader to appreciate the implications of operating at various locations on Figure 1.

While effective teaching and learning can occur anywhere on Figure 1, we are suggesting that the process-oriented, student-structured approach has traditionally been neglected in general level courses and that much value would occur in working in this area.

We hope that the reader will find the activities useful triggers for designing his/her own teaching strategies.

ACTIVITY 1
THE CLASSROOM AS A SOURCE OF DATA

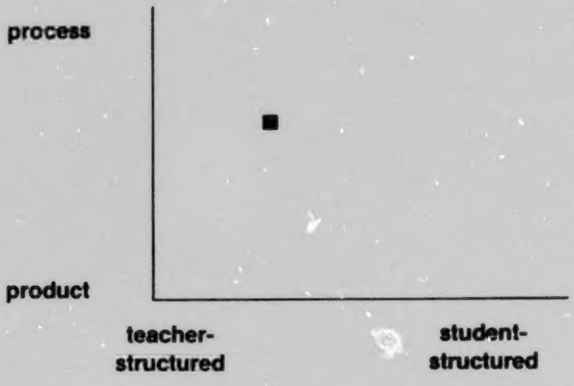
RATIONALE AND OBJECTIVES

Using the students in a classroom as a source of data can serve many purposes, the teacher gets to know the class quickly, the students learn more about each other and, in the context of geography, many skills in data collection, data organization, and data analysis can be introduced and reinforced.

In this exercise, student collects data from other students; these data are then organized, mapped and graphed.

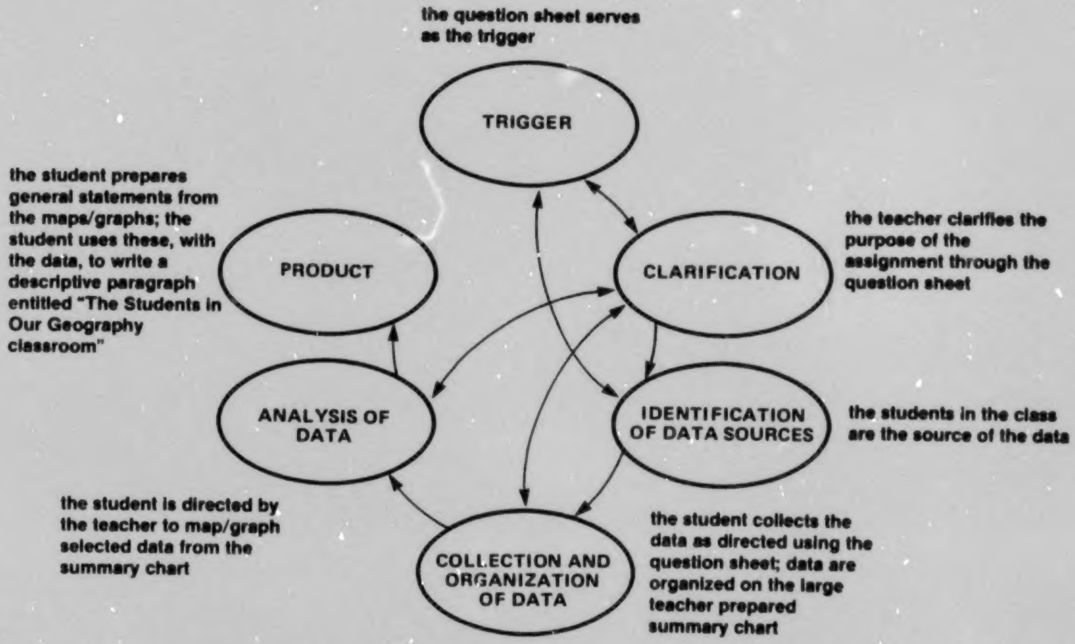
APPROACH

As presented, this activity may be placed:



- the student is working within a teacher-structured framework in which the teacher identifies the source of data, determines how the data is to be collected, organizes the data for the student and makes suggestions as to how to analyse the data
- the student makes decisions about graphing/mapping the data
- when the checklist is completed, the student becomes more aware of the process implicit in the exercise

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the question sheet serves as the trigger

the teacher clarifies the purpose of the assignment through the question sheet

the students in the class are the source of the data

the student collects the data as directed using the question sheet; data are organized on the large teacher prepared summary chart

the student is directed by the teacher to map/graph selected data from the summary chart

the student prepares general statements from the maps/graphs; the student uses these, with the data, to write a descriptive paragraph entitled "The Students in Our Geography classroom"

SUGGESTIONS FOR THE TEACHER

- distribute "the Classroom as a Source of Data - Question sheet" to each student; have the class examine the types of questions that have been asked and, as a class, make up some additional questions

- have each student complete the question sheet individually, or have the students work in pairs where one interviews the other

- to monitor the process as the exercise proceeds, give each student the checklist sheet *before* starting the exercise

- once the data have been collected, have each student fill in the master chart which the teacher has prepared (see the sample below):

THE CLASSROOM AS A SOURCE OF DATA

Name of Student	**Question Number**																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

- if you have a large class, use "progressive" techniques to complete the chart, i.e., use progressively larger groups to exchange data

- the completed chart may be placed on the blackboard, bulletin board, etc.

- use the completed chart as "data"; instruct the student to map/graph the data; some of the data may be graphed (e.g., #3, 4, 6, 9, etc.); while other data may be mapped (e.g., #1, 7, 13, etc.)

- divide the tasks of mapping/graphing amongst individuals or groups; the graphs/maps should be made large enough so that they may be displayed around the classroom; i.e., have the students use large sheets of graph paper/newsprint

- when the maps/graphs have been completed, have the students put them on display around the classroom

- distribute "The Classroom as a Source of Data — Student Worksheet"; using the completed graphs/maps, have the student make general statements based on the data; e.g., "Not all members in our geography class were born in Canada" or "Most of the students in our class take a bus to school", etc.

- the general statements should always be backed up with specific data as suggested on "The Classroom as a Source of Data — Student Worksheet"

- when "The Classroom as a Source of Data — Student Worksheet" has been completed, have the student write a descriptive paragraph entitled "The Students in Our Geography Classroom"; encourage the student to write the paragraph in a different order from that of the general statements
- "The Classroom as a Source of Data — Paragraph Marking Sheet" may be given to the student before the paragraph is written, as a guideline

EVALUATION OF PRODUCT

- mark the graphs/maps according to whatever criteria the teacher has established prior to the assignment (accuracy legibility etc.)
- mark the paragraph using the paragraph marking sheet

MONITORING OF PROCESS

- have each student complete the checklist as he/she works on the exercise

ADDITIONAL IDEAS

- have the class design an interview sheet in place of the one provided
- use this exercise at the beginning of any geography course to introduce students to basic techniques in data collection, organization, and analysis
- expand the focus of this exercise to include mapping the classroom; then, using classroom maps drawn to scale, introduce the concept of exact location in space (latitude and longitude) by devising a classroom grid system which would allow for the identification of each person's desk (masking tape on the floor is helpful in demonstrating grid lines)
- use this exercise in conjunction with "What Kind of a Place is Our Place?" (Activity #14)
- use the approach of the exercise (i.e., getting to know "our" class) as the basis for a course of study; e.g. by looking at the type of questions that help one "get to know" the class, have the students generate questions that would help them "get to know" Canada

THE CLASSROOM AS A SOURCE OF DATA
— QUESTION SHEET —

This exercise will help us learn more about the members of our class. Answer each of the questions in the space provided.

1. Country I was born in: ______________________________
2. Languages I speak: ______________________________
3. My height: ______________________________
4. The colour of my eyes: ______________________________
5. The colour of my hair: ______________________________
6. My age: ______________________________
7. My address: ______________________________
8. Type of transportation I use to come to school: ______________________________
____
9. Favourite sport I watch: ______________________________
10. Sport I like to play: ______________________________
11. My favourite musical group: ______________________________
12. My favourite colour: ______________________________
13. My favourite city: ______________________________
14. My after-school job: ______________________________
15. My favourite television show: ______________________________
16. ______________________________
17. ______________________________
18. ______________________________
19. ______________________________
20. ______________________________

THE CLASSROOM AS A SOURCE OF DATA
— STUDENT WORKSHEET —

After you have finished your maps/graphs, put them up for display. When all the maps/graphs have been placed around the classroom, study each map/graph and complete the following:

GENERAL STATEMENT (What the data tell me)	SUPPORTING DATA

Use the general statements and the data to write a paragraph called "The Students in Our Geography Classroom."

THE CLASSROOM AS A SOURCE OF DATA
— PARAGRAPH MARKING SHEET —

		low .... high				
I	**ORGANIZATION**					
	1. introduction	1	2	3	4	5
	2. body	1	2	3	4	5
	3. conclusion	1	2	3	4	5
II	**CONTENT**					
	1. accuracy of general statements	1	2	3	4	5
	2. facts (supporting data) are included	1	2	3	4	5
III	**LANGUAGE**					
	1. spelling	1	2	3	4	5
	2. grammar	1	2	3	4	5
	3. clarity of communication	1	2	3	4	5

COMMENTS: ____

____

____

____

____

TOTAL: /40

THE CLASSROOM AS A SOURCE OF DATA
— CHECKLIST —

TASK	(✓)	What I did to complete the task	Problems I had in completing the task
Understanding the exercise			
Getting the data			
Organizing the data			
Analysing the data			
Presenting the data			

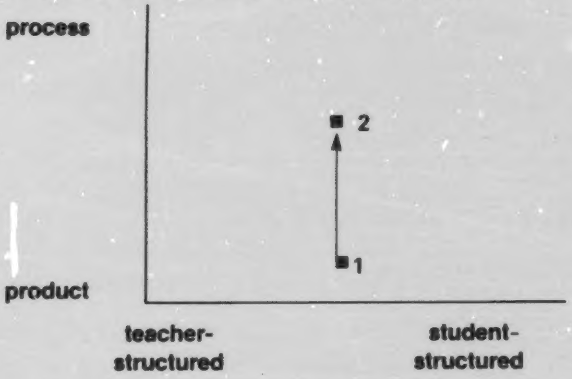
ACTIVITY 2
CULTURE CONTACT

RATIONALE AND OBJECTIVES

The concept of culture contact is a recurring theme in geography. This exercise helps students to put any specific example of culture contact into a framework. It can be used as an introduction to any unit involving this important concept, for example, a native people unit, international relations, etc. The ideas of ghetto, apartheid, multiculturalism, migration, diffusion, etc. can all be placed in the framework introduced in this exercise.

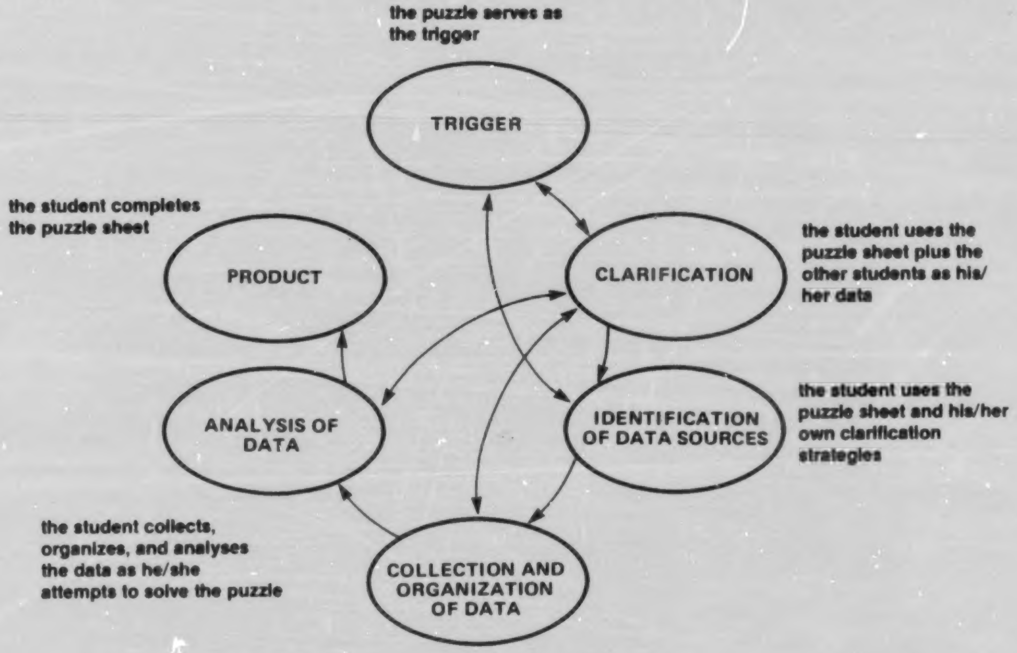
APPROACH

As presented, this activity may be placed:



- the student is given the data and maintains a high degree of control over the clarification, analysis, and presentation stages of the exercise
- if the follow-up sheet is included, the exercise would move from position 1 to position 2

In this activity:


the puzzle serves as the trigger
TRIGGER
the student completes the puzzle sheet
PRODUCT
CLARIFICATION
the student uses the puzzle sheet plus the other students as his/her data
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the student uses the puzzle sheet and his/her own clarification strategies
the student collects, organizes, and analyses the data as he/she attempts to solve the puzzle
COLLECTION AND ORGANIZATION OF DATA

SUGGESTIONS FOR THE TEACHER

- allow students individually, in pairs, or in larger groups to solve the puzzle; give the students only the puzzle sheet, with no explanation other than the title
- the teacher should monitor the frustration levels of the different students or groups of students who are attempting to solve the puzzle; giving hints might be necessary, although this is usually not the case
- the exercise is often less frustrating, more productive and more fun if students work together on it
- the different answers or suggestions from the class can be discussed, placed on the board, etc.
- have the students complete the process monitoring (follow-up) sheet

EVALUATION OF PRODUCT

- the completed puzzle sheet could be evaluated as to how logical and well explained it is
- note: there are many possible answers for the sheet

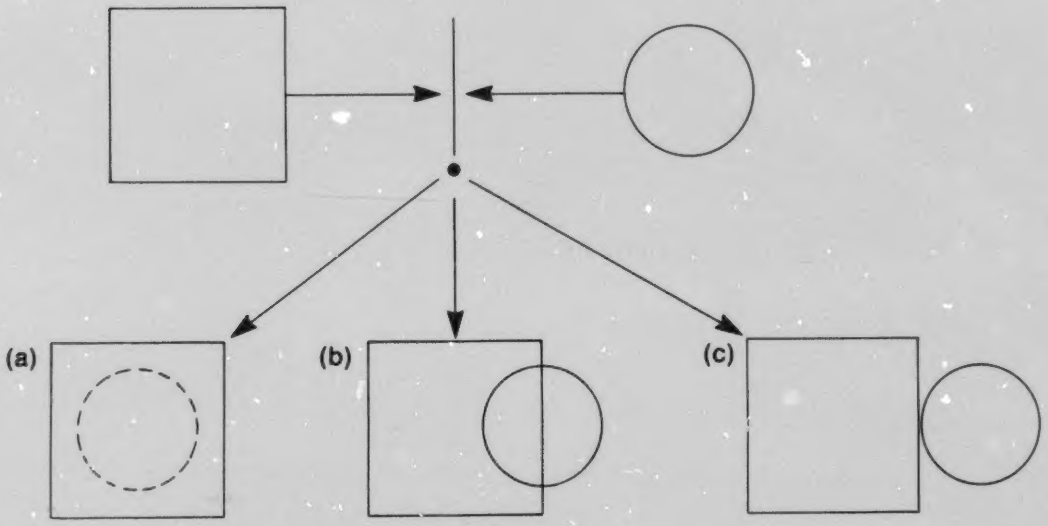
MONITORING OF PROCESS

- the follow-up sheet should be marked

ADDITIONAL IDEAS

- a possible explanation would be that a strong culture (□) comes in contact with a weaker culture (◌); the possible outcomes are: (a) destruction of the weaker culture through force or assimilation (⊡); (b) a sharing of ideas and values (⧉); and (c) the cultures meet but choose to remain separate (□○); it is interesting in the latter case to distinguish between incidents where the weaker culture chooses to remain separate (e.g., the Mennonites) and incidents where the weaker culture is forced to remain separate (e.g., Apartheid)

CULTURE CONTACT
— PUZZLE SHEET —



EXPLANATION (a) ____________ (b) ____________ (c) ____________

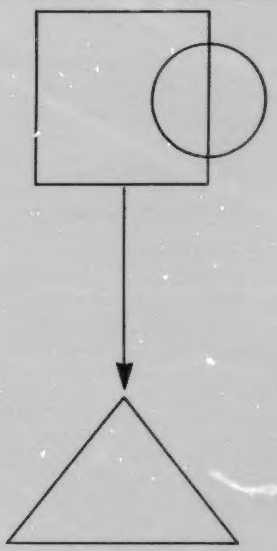
EXAMPLES (a) ____________ (b) ____________ (c) ____________

CULTURE CONTACT
— FOLLOW UP SHEET —

1. What was the main problem you had in trying to solve the puzzle?

2. What were some of the suggestions which were thought or talked about but which you rejected or did not use?

3. What could be a possible explanation of the following diagram?



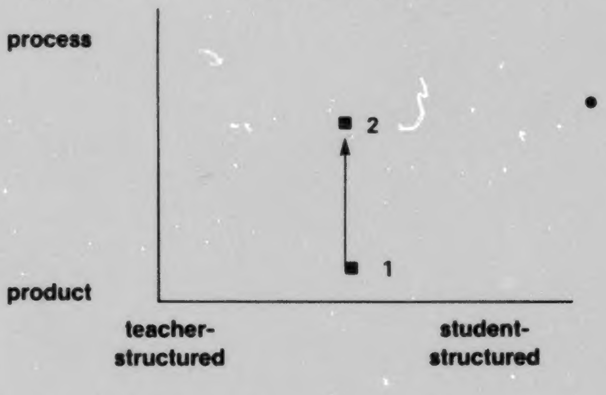
ACTIVITY 3
THE ENVIRONMENTS OF OUR NATIVE PEOPLES

RATIONALE AND OBJECTIVES

In a country as large and diverse as Canada, students should be able to recognize the relationships which exist between the physical and human patterns which they study. The purpose of this exercise is to have students identify the relationships which existed between our native peoples and their environments. The exercise can be used as a summary to a native peoples unit, as a pre- or post-test, or as a review.

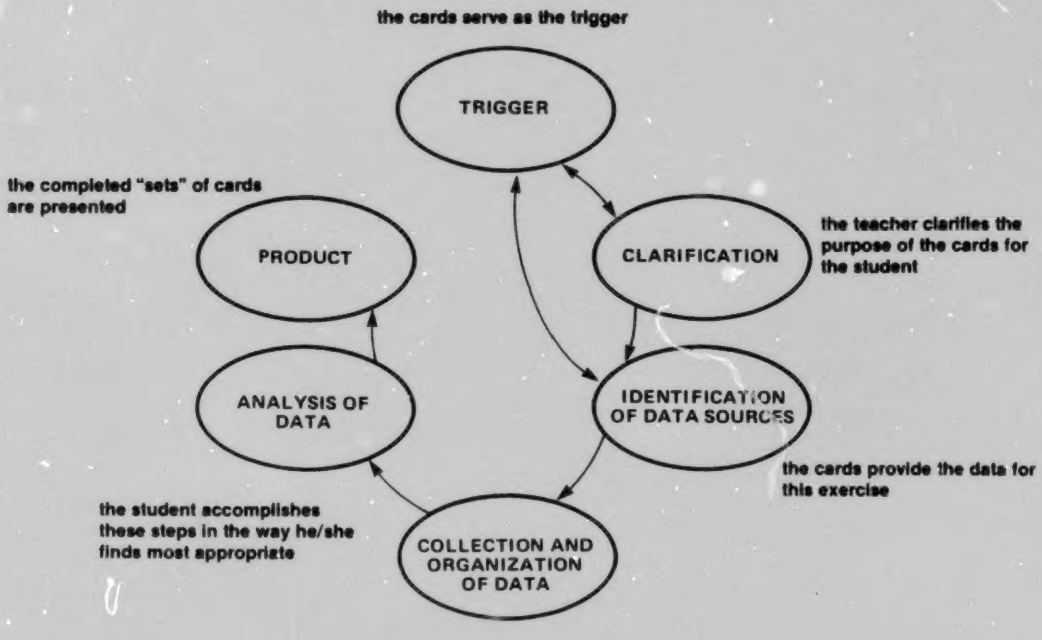
APPROACH

As presented, this activity may be placed:



- the student is provided with the data and then makes his/her own decisions as to how to best organize the data and solve the problem
- when the follow-up sheet is used, the exercise would move from position 1 to position 2 as the student is made aware of the nature of the exercise

In this activity:


the cards serve as the trigger
TRIGGER
the completed "sets" of cards are presented
PRODUCT
CLARIFICATION
the teacher clarifies the purpose of the cards for the student
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the cards provide the data for this exercise
the student accomplishes these steps in the way he/she finds most appropriate
COLLECTION AND ORGANIZATION OF DATA

SUGGESTIONS FOR THE TEACHER

- provide each student or group of students with a complete set of the twenty five cards
- instruct the student that their task is to match the cards such that one climate graph, one vegetation diagram, one cultural description, one geographic location, and one card of drawings form a logical "set"
- if you wish the exercise to be a research activity then texts and atlas can be provided

EVALUATION OF PRODUCT

- the degree of accuracy in matching up the cards can be assessed

MONITORING OF PROCESS

- the follow-up sheet can be completed and marked

ADDITIONAL IDEAS

- the cards can be cut out, shuffled, and used to play "pig" or "spoons" (five students are dealt the cards; they then pass them one at a time to the person next to them; the object is to form a correct set before anyone else)
- the exercise can easily be turned into a game; the student or group of students who solve the problem first can receive 20 points, the second student or group of students might receive 18 points, etc.; points can be deducted for a wrong answer
- this type of an approach can be used to test, reinforce, or review any of the many relationships which we cover in the Canada course

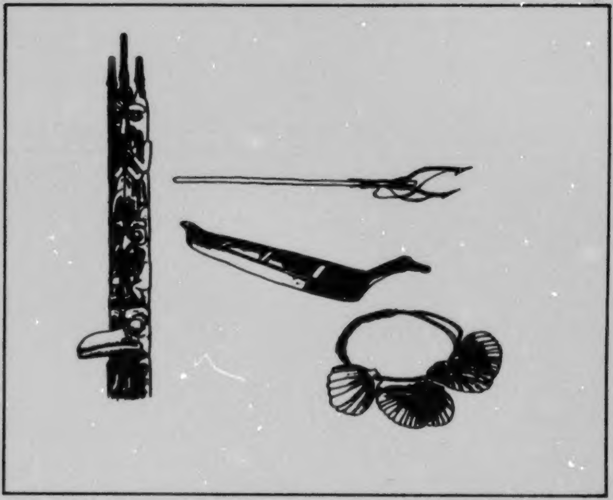
THE ENVIRONMENTS OF OUR NATIVE PEOPLES
— FOLLOW-UP SHEET —

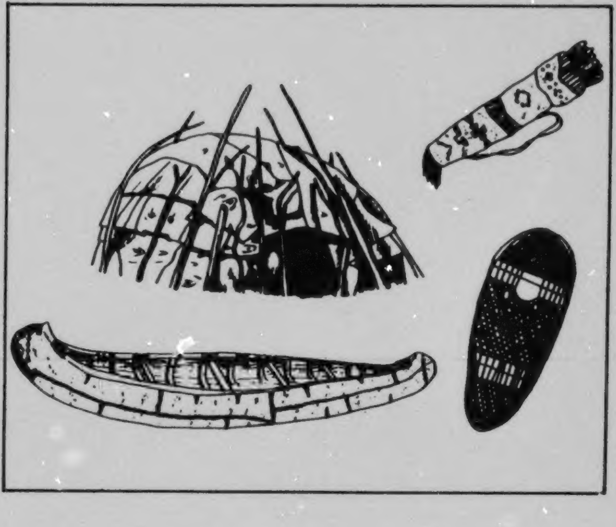
1. What was the data source used in this exercise?

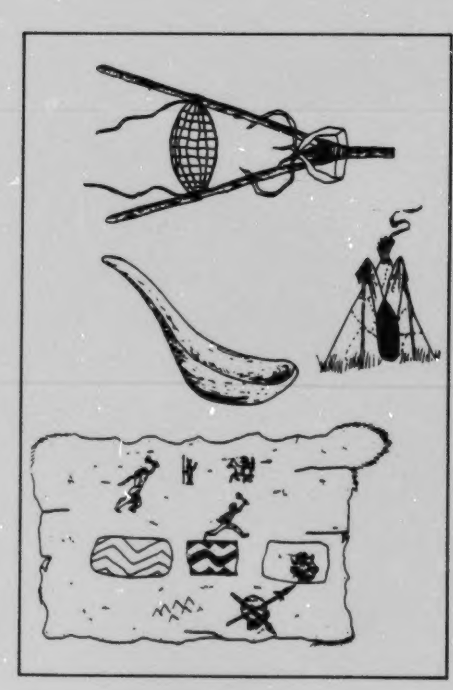
2. Explain the major problem you had in trying to "match up" the cards.

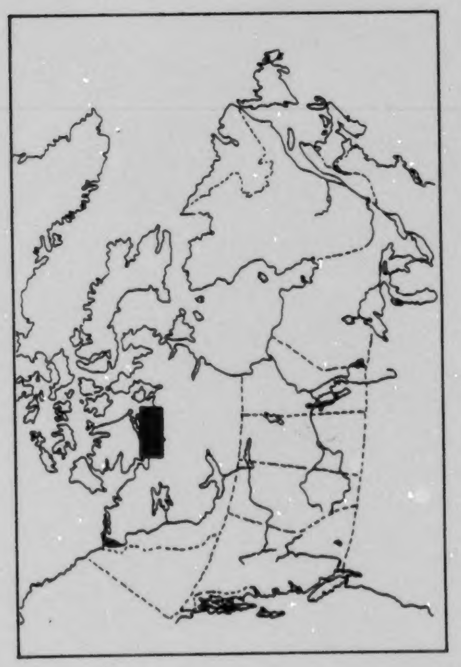
3. Which cards were the most difficult ones to "match up"? Why?

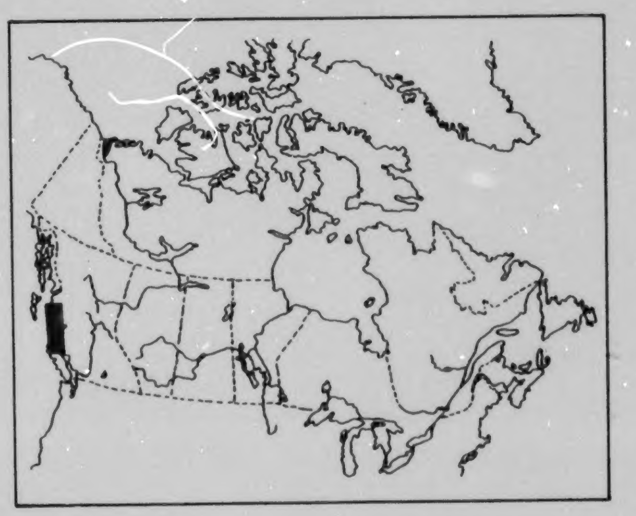
4. Suggest other types of data which could be put on cards and used in a matching exercise such as this one.

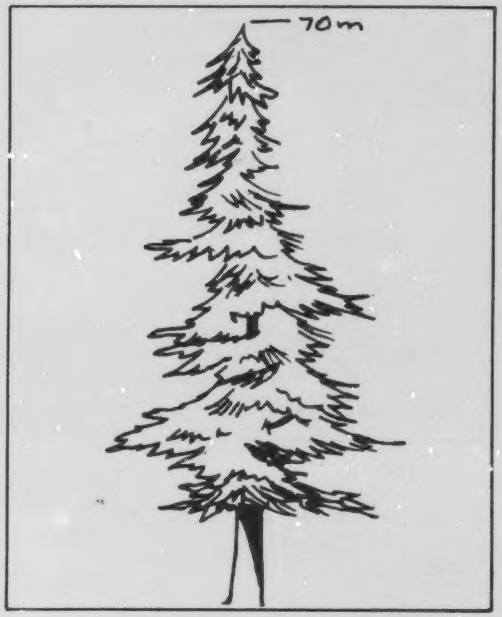








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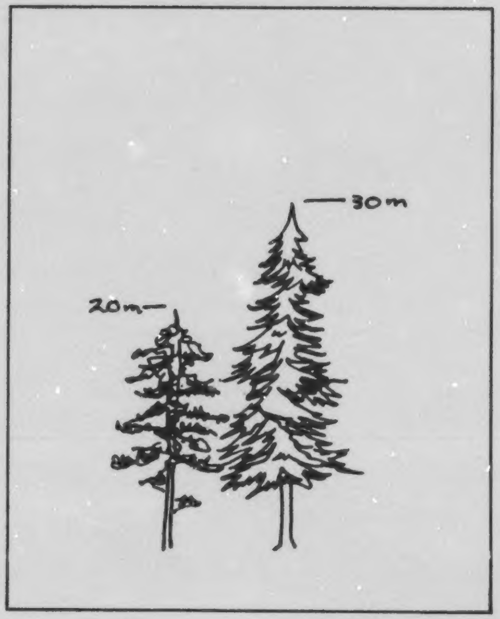
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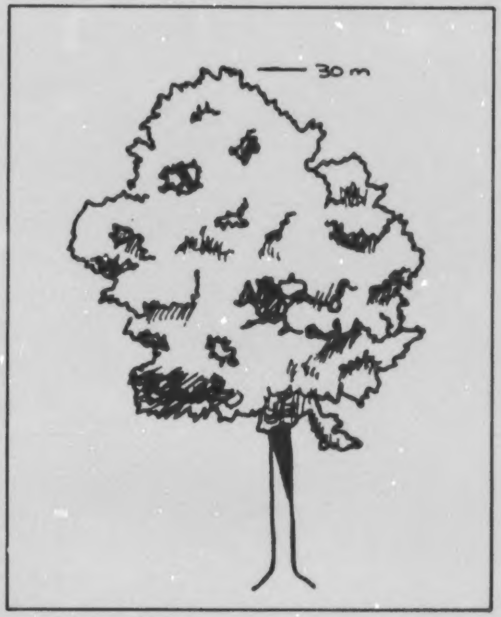
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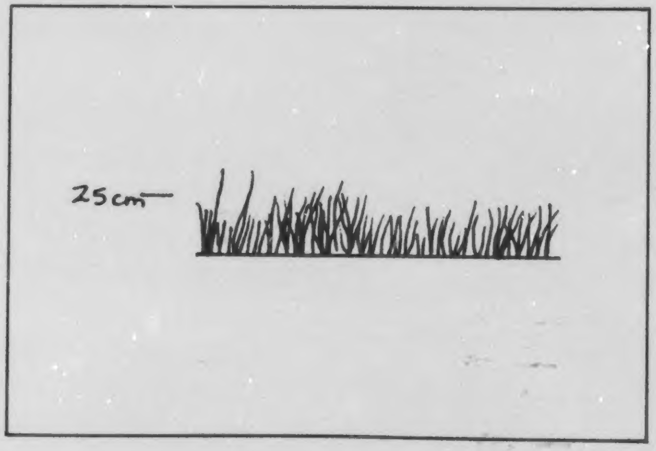
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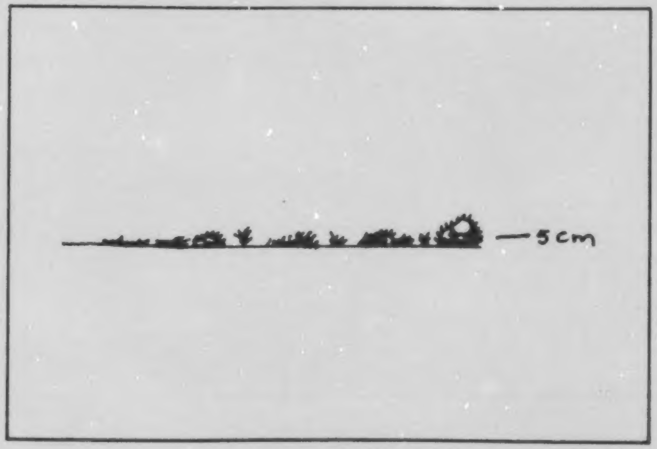
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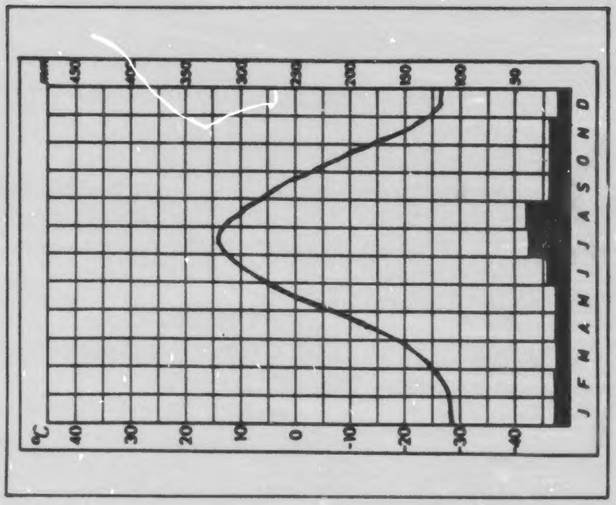
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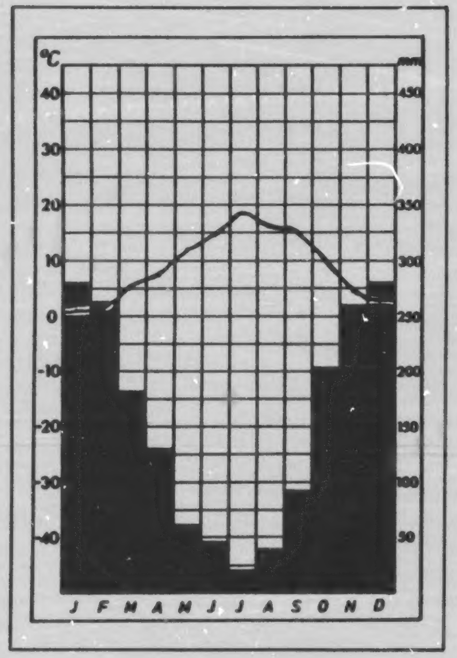
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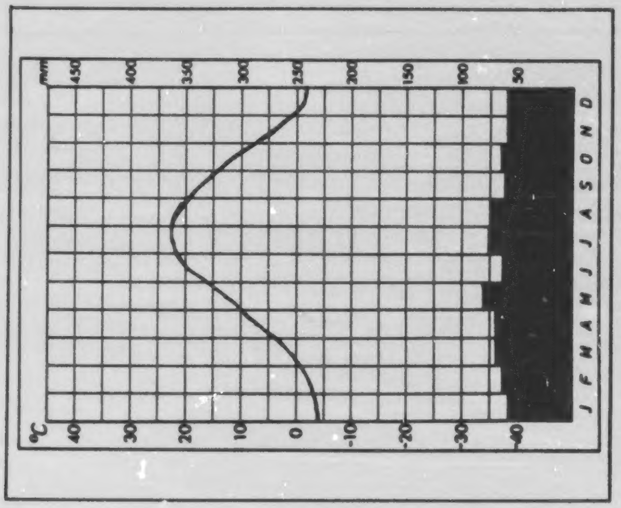
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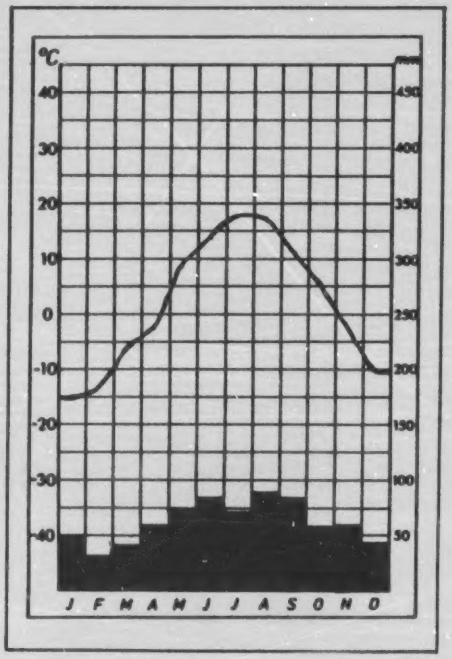
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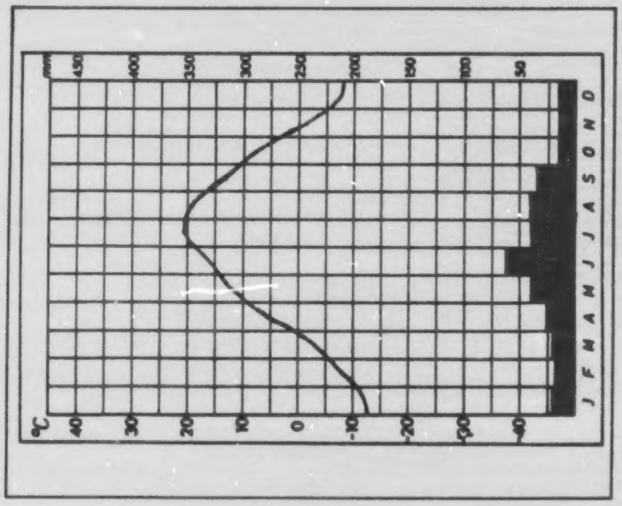
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J F M A M J J A S O N D

Next week my husband will begin work on our totem. This is a great honour. Before building the totem we must first give a potlatch, which is a great feast, for the other noblemen in our village. My family's spirits will finally be contented when our totem is finished. Our people are indeed blessed. The trees grow to the sky, the salmon are plentiful, the spirits of the land and water are kind to us.

The Sun-Manito has been generous. Before us, as far as the eye can see, we behold the animal that gives us life. The animals will provide us with skins, bones, sinew, and meat. This means that for a short time we will remain in one place; however, we will soon move on for this is our way. The tribe is preparing for the Sun-Dance ceremony during which many of our sons will become men and warriors.

My brother has stood motionless now for five hours. Bent over the hole, he does not talk, look up or move. I adjust my glasses — the slits in them allow me to see great distances without being blinded. I can see our wives cleaning and drying fish at our camp. Soon summer will come and we will move inland. The clouds and wind suggest a late winter storm, we should return to camp now.

The summer has been dry. The corn, beans and squash are small and I am worried about having enough food for the winter. We have been at this village site for six years now and I fear that the soil is dead here. I must find the Sharman and have him pray for a mild winter. The Society of Faces will need to make many False Faces in order to keep death away from our door.

Food that had been plentiful in the fall is getting scarce. Ducks and geese have flown south. Bears are hibernating and the beaver houses are frozen. Moose are scarce this year and even the Jossakeed does not know why.. When we return to our wigwam, I will beat my drum and sing a song to Keewatin, the north wind, so that he will bring the snow to make hunting easier.

ACTIVITY 4
WORD PICTURES

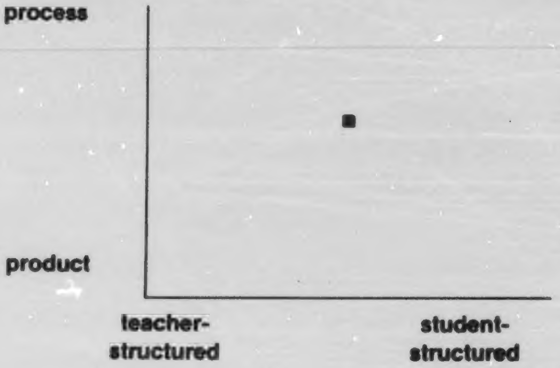
RATIONALE AND OBJECTIVES

Having the student acquire and use a geographic vocabulary may be one of the objectives in a particular lesson or unit. Since visual images tend to strengthen the understanding of ideas/concepts, the creation of a word picture can help to reinforce the meaning of a term. In designing a word picture, the student needs to reflect on the full meaning of the term. When the image has been produced, the mental picture of the word tends to trigger its meaning.

This exercise is designed to introduce the student to word pictures.

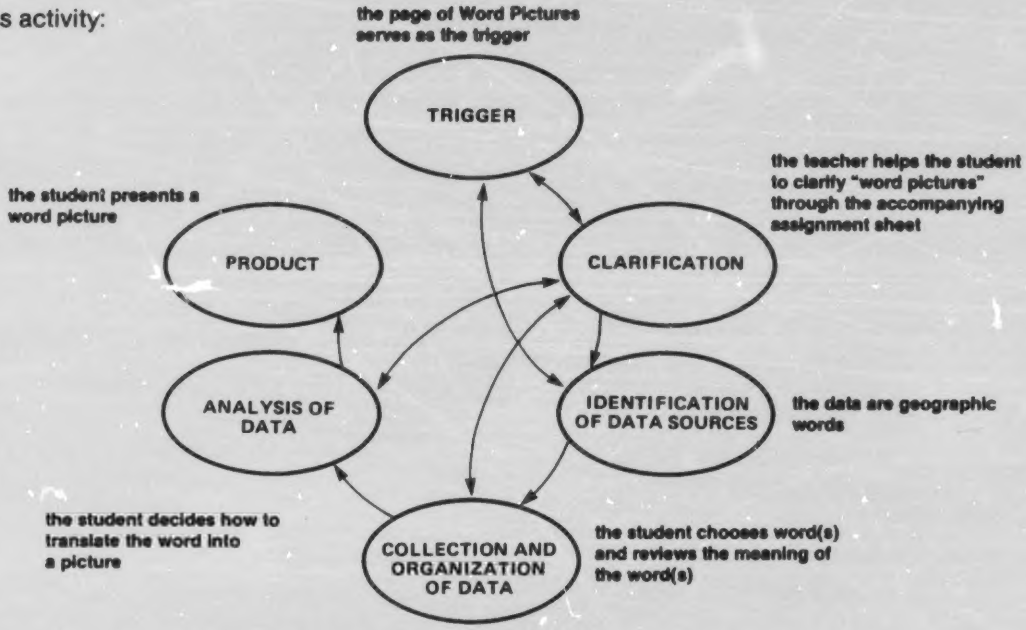
APPROACH

As presented, this activity may be placed:



- the student is working within a teacher-defined framework but is able to make decisions about what word to choose and how to depict it
- if the follow-up sheet is completed and discussed, the student becomes more aware of the strategies used to complete the exercise

In this activity:


the page of Word Pictures serves as the trigger
TRIGGER
the teacher helps the student to clarify "word pictures" through the accompanying assignment sheet
CLARIFICATION
the student presents a word picture
PRODUCT
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the data are geographic words
the student decides how to translate the word into a picture
COLLECTION AND ORGANIZATION OF DATA
the student chooses word(s) and reviews the meaning of the word(s)

SUGGESTIONS FOR THE TEACHER

- present the idea that visual images are easy to remember, i.e., we tend to remember pictures better than words
- give the student the sheet titled "Word Pictures" and the "Word Pictures — Student Worksheet" that goes with it
- have the student complete the student worksheet
- when the student worksheet has been completed, discuss how word pictures describe something about the meaning of a word; e.g. by making a letter resemble a shape; by adding a symbol to a letter; by changing the shape of the word, etc.
- have the student create his/her own word picture; encourage the student to use a variety of techniques to create the word picture
- if there are particular words that the teacher wishes the student to work with, provide the student with such a list
- when the student has completed his/her word picture, have the student complete "Word Pictures — Follow-up Sheet"
- when the follow-up sheet has been completed, discuss with the class the different techniques used by the students to produce their word pictures
- display the word pictures; encourage the students in the class to examine each word picture and identify something positive about each

EVALUATION OF PRODUCT

- evaluate the word picture on the basis of its originality, accuracy with respect to the meaning of the word, neatness, etc.

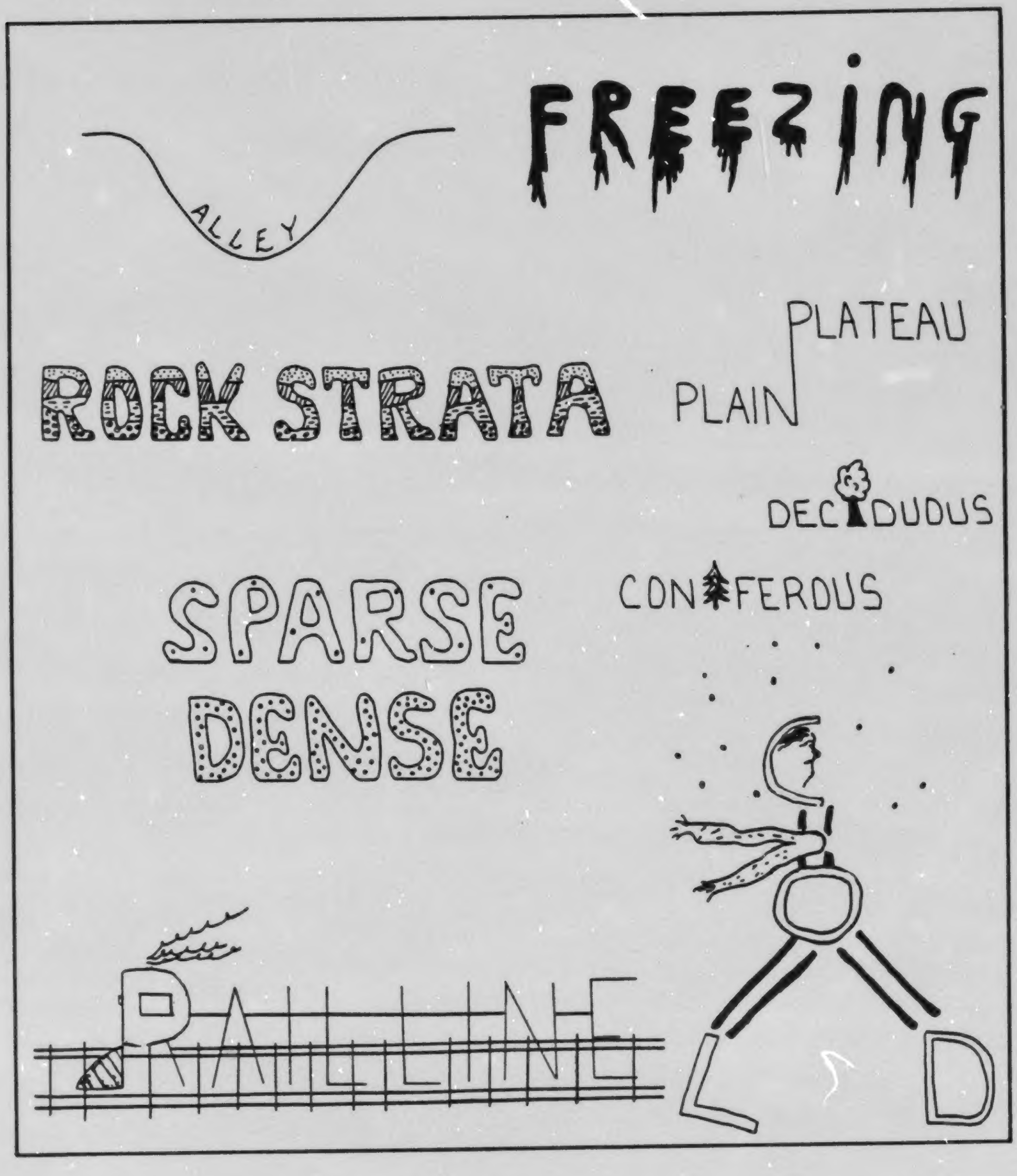
MONITORING OF PROCESS

- the student completes the follow-up sheet which reviews the assignment and identifies the process

ADDITIONAL IDEAS

- use the word pictures to diagnose misconceptions, i.e., a student may be able to memorize a definition, but may not fully understand its meaning
- the pictures created in one class can be used as test data in another, i.e., does the word picture convey the meaning of the word? why or why not? how could the word picture be improved? etc.
- use word pictures for bulletin board displays inside and outside the classroom
- collect interesting word pictures drawn by students throughout the year and compile them for a book, future displays, use in the elementary schools, publication in the school newspaper etc.
- have the students look for examples of word pictures in advertising, e.g., the trademarks of "Bicks," "General Bakers," "Stelco," "Kodak," "IBM," etc. are all word pictures

WORD PICTURES



WORD PICTURES
— STUDENT WORKSHEET —

Sometimes a word can be shown in such a way that a person looking at the word can tell something about what the word means. Look at the sheet showing "Word Pictures" and complete the following:

WORD	What the word picture tells me about the meaning of the word	How the word picture tells me this information
VALLEY		
FREEZING		
ROCK STRATA		
PLAIN; PLATEAU		
CONIFEROUS; DECIDUOUS		
SPARSE; DENSE		
COLD		
RAIL LINE		

WORD PICTURES
— FOLLOW-UP SHEET —

1. Show your word picture to other members of the class:

   a) Do they understand your word picture? ______________________________

   b) If it is not understood, ask how to improve your word picture. Draw the suggestion(s) in the space below:

2. What did you do to help make the word into a picture? On the list below, place a checkmark beside the strategies you used to make your word picture:

__________ I looked through my geography notes

__________ I looked up the word in a dictionary

__________ I asked a friend for some ideas

__________ I asked the teacher for help

__________ I chose a new word when my first choice was too difficult

__________ I "doodled" in my notebook to help get some ideas

__________ I looked at the examples of word pictures

__________ I just drew something

__________ I used other ways (explain) ______________________________

____

____

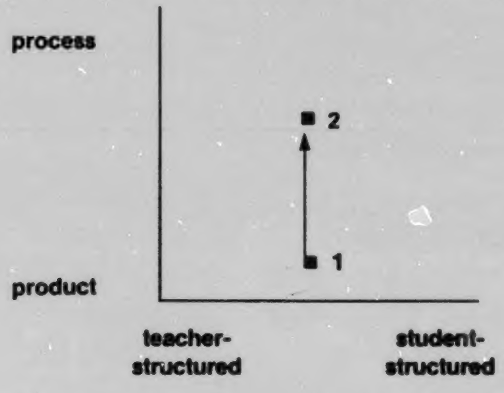
ACTIVITY 5
CLASSIFICATION

RATIONALE AND OBJECTIVES

The ability to classify is extremely important when organizing and analysing data. This exercise introduces students to classification systems and identifies some of the pitfalls to avoid.

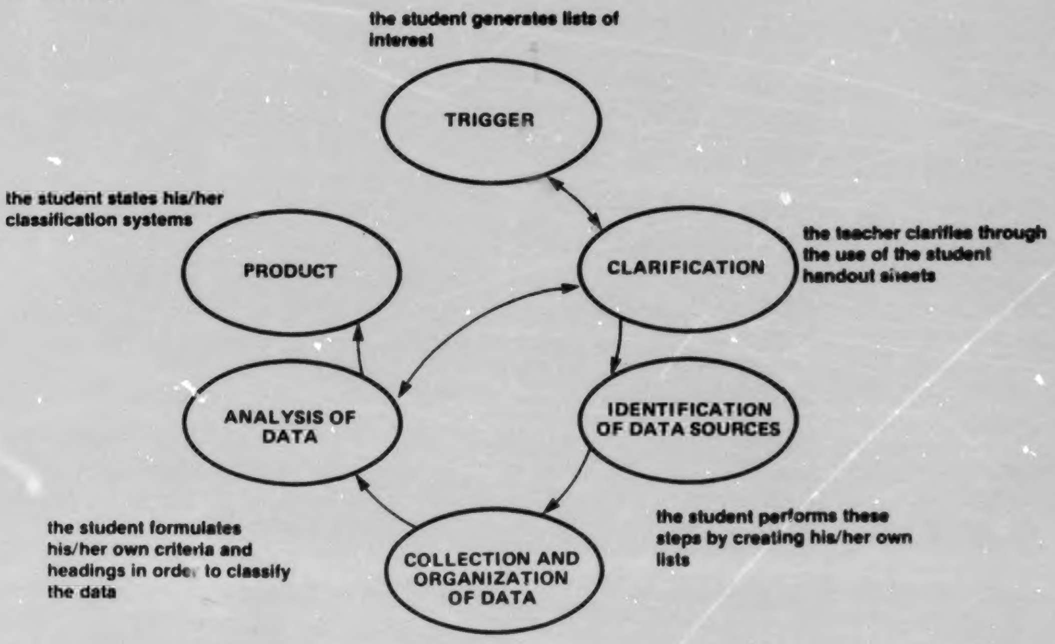
APPROACH

As presented, this activity may be placed:



- the student generates and organizes his/her own data; the clarification stage is highly teacher-structured
- if the follow-up sheet is used, the exercise would move from position 1 to position 2

In this activity:


the student generates lists of interest
TRIGGER
the student states his/her classification systems
PRODUCT
CLARIFICATION
the teacher clarifies through the use of the student handout sheets
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the student formulates his/her own criteria and headings in order to classify the data
COLLECTION AND ORGANIZATION OF DATA
the student performs these steps by creating his/her own lists

SUGGESTIONS FOR THE TEACHER

- have students generate lists of items in which they have an interest (e.g. ten teachers, ten TV shows, ten rock groups, ten world countries etc.)
- have students work through the student pages on classification systems; you might wish to work through these pages with the students
- direct students back to their lists for practice in classifying different types of data

EVALUATION OF PRODUCT

- the students' classification systems can be marked; the systems should be both definitive and inclusive (see student handout sheets)

MONITORING OF PROCESS

- students can be directed to complete the follow-up sheet

ADDITIONAL IDEAS

- following this exercise, the students can be instructed to classify data relating to their present unit of study
- the idea that one classification system is more appropriate than another for a given purpose or situation should be developed
- for additional practice, have students attempt to classify decks of playing cards in as many ways as possible
- a grab bag of assorted objects can also be utilized to develop classification skills

CLASSIFICATION SYSTEMS
— STUDENT WORKSHEET —

A classification system is based on a criterion. For example, we can classify the students in class based on their ages; thus age is the criterion. A different criterion, which could be used, is weight. A third criterion might be marks. Once a criterion is chosen, headings must be chosen. For example, if we take the students in class and decide to classify them based on the criterion of age, then headings which will group together students with similar ages must be chosen.

Example:

Items to be classified: Students in the school
Criterion to be used: Age
Headings to be used: (1) Students under 14 years old;
(2) Students 14 to 16 years old;
(3) Students over 16 years old.

We can then go ahead and put each student in class under the right heading.

When we make up a classification system we must be as careful as is possible to make sure that it is "definitive" and "inclusive".

Definitive means that each item in the group that we are classifying should fit only under one of the headings. For example the following system is not definitive:

Items to be classified: Students in the school
Criterion to be used: Age
Headings to be used: (1) Students under 14 years old;
(2) Students 14 to 16 years old;
(3) Students 16 to 18 years old;
(4) Students over 18 years old.

Why is the above system not definitive? ____________________

____

Definitive also means that the headings should be clear enough so that different people can use the classification system and come out with the same results. For example the following system is not definitive:

Items to be classified: Students in the school
Criterion to be used: Height
Headings to be used: (1) Tall,
(2) Average,
(3) Short.

Why is the above system not definitive? ____________________

____

Inclusive means that when we make up our headings we should make sure that each item in the group we are classifying will be able to fit under one of our headings. For example, the following system is not inclusive:

Items to be classified: Students in the school
Criterion to be used: Age
Headings to be used: (1) Students under 14 years old;
(2) Students 15 to 17 years old;
(3) Students over 17 years old.

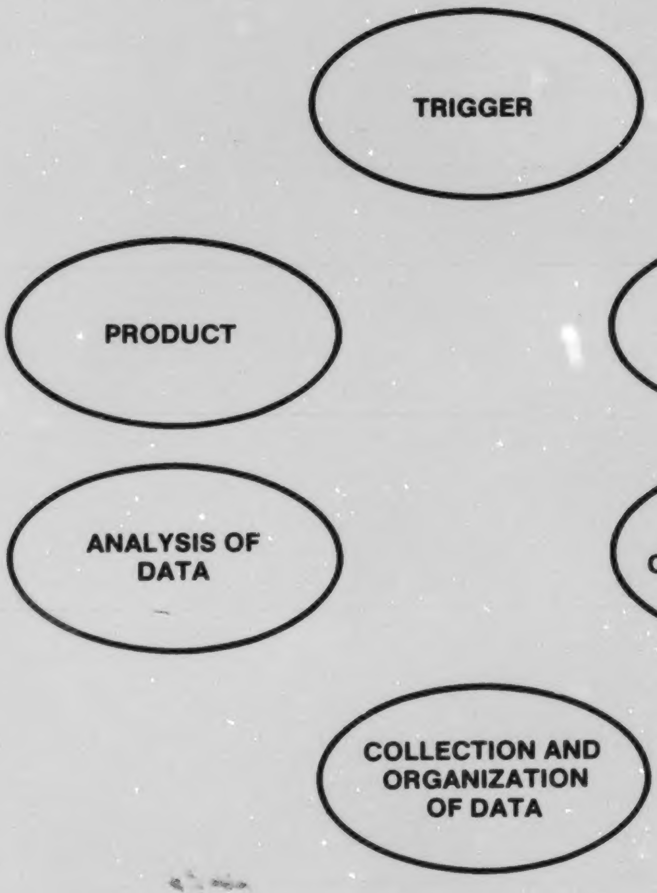
Why is the above system not inclusive? ____________________

____

For each of the lists which you made up at the begining of the period, make up three classification systems. Be sure to state clearly your criteria and headings.

CLASSIFICATION
— FOLLOW-UP SHEET

Using the diagram below, fill in the steps you went through to arrive at your classification systems:


TRIGGER
PRODUCT
CLARIFICATION
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

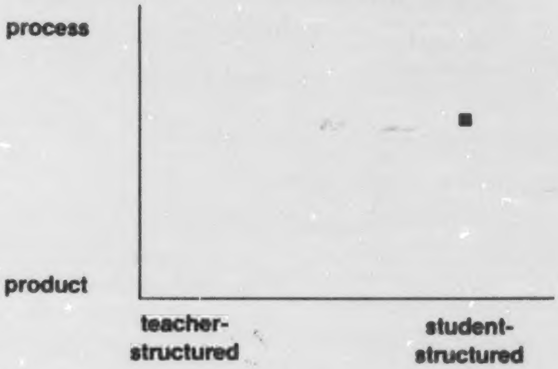
ACTIVITY 6
IDENTIFYING AND JUDGING DATA SOURCES

RATIONALE AND OBJECTIVES

Students sometimes view their textbook and teacher as the only data source available to them. This exercise gives students a wide range of data sources and allows them to make conclusions as to their usefulness under different situations.

APPROACH

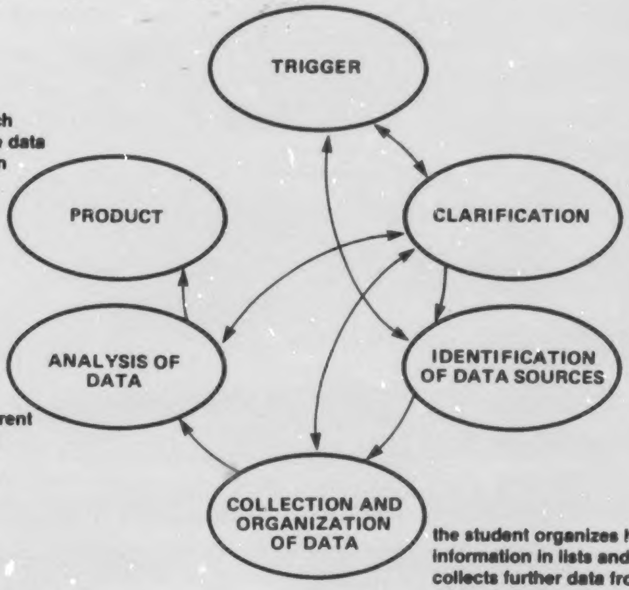
As presented, this activity may be placed:



- the student identifies, organizes and analyses the data
- the teacher clarifies the task for the student
- the process is monitored through the questions on the follow-up sheet

In this activity:

An apple serves as a trigger


TRIGGER
PRODUCT
CLARIFICATION
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

the student presents each question followed by the data sources seen as useful in answering the question

the teacher clarifies the assignment through the use of classroom direction

the student generated lists serve as the data source

the student uses the different lists in order to judge the usefulness of the data in answering the question

the student organizes his/her information in lists and collects further data from other students

SUGGESTIONS FOR THE TEACHER

- divide the class into two sections
- show the class an apple
- assign the students in one section the task of listing all possible sources of information which could provide them information about the apple
- make sure students identify at least 15 sources, for example they could list textbooks, apple farmer, county fairs, encyclopaedias, the apple itself, marketing boards, etc.
- assign the students in the second section of the class the task of formulating questions that could be asked about apples; make sure the students formulate at least 15 questions
- have each student pair up with a student from the other group
- instruct each pair to examine their lists; after each question on the one list direct students to write down the data sources from the other list which would prove useful in answering the question
- students should now complete the follow-up sheet

EVALUATION OF PRODUCT

- have students make summary statements concerning what they have learned about data sources from this exercise

MONITORING OF PROCESS

- process can be evaluated through the use of the follow-up sheet

ADDITIONAL IDEAS

- students may work in groups in making their lists
- as a conclusion, you could instruct the students to verify their answers, that is, do their suggested data sources really answer the question?
- the procedure can be used with any trigger, for example, a city might be used

IDENTIFYING AND JUDGING DATA SOURCES
— FOLLOW-UP SHEET —

1. How did you obtain the data that you used in this exercise?

2. The purpose of this exercise is to show you the number of different types of data sources that can be used. List those data sources you identified that you have never used in school before.

3. Other than an apple, what things could have been used as a trigger for this exercise?

4. What part of this exercise did you find most difficult? Why?

ACTIVITY 7
INVESTIGATING CANADA, USING THE GLOBE

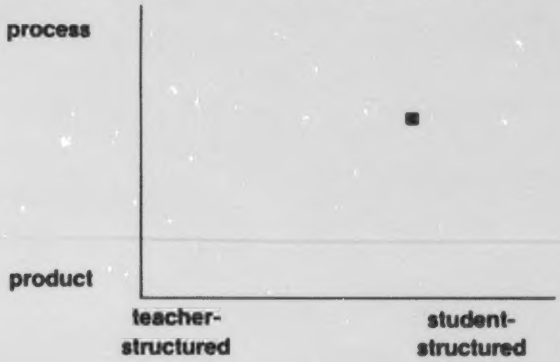
RATIONALE AND OBJECTIVES

Much information about Canada can be obtained from the globe. By using the globe as a source of data, the student develops and reinforces many skills. When the data are used to make comparisons or to generate questions, additional skills involving organization and presentation are developed.

In this exercise, the student collects data about Canada, using the globe.

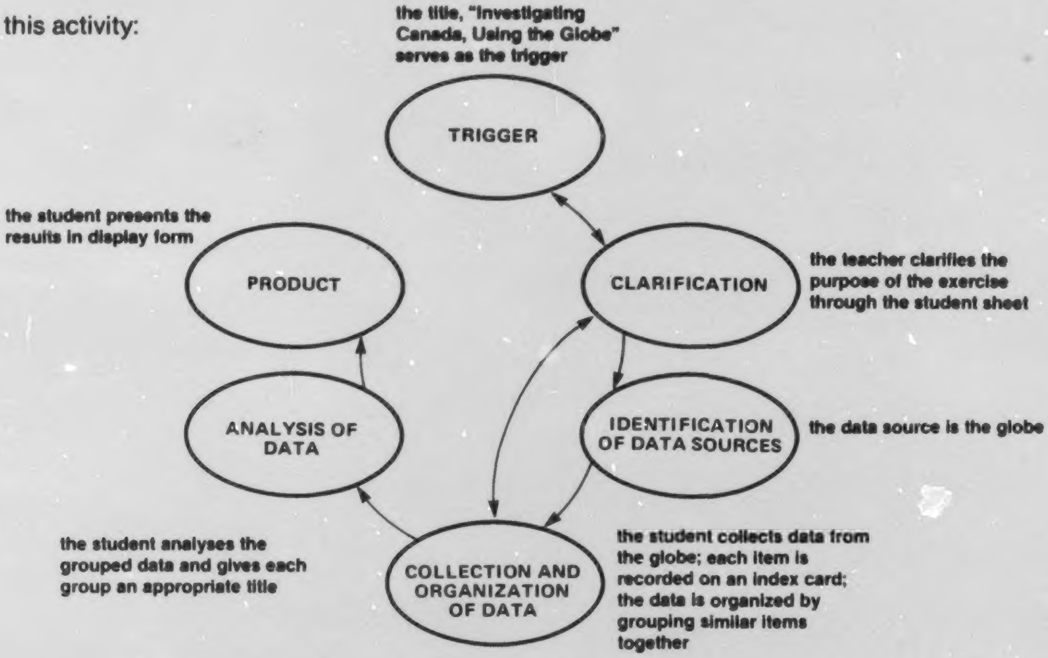
APPROACH

As presented, this activity may be placed:



- the student is working within a teacher-structured framework in which the teacher identifies the data source and makes the decision on how the data is to be collected
- the student makes decisions about what data to collect, how to organize the data, and how to present the data in display form
- the student becomes more aware of the role played by the data in the process when the follow-up sheet is completed

In this activity:


the title, "Investigating Canada, Using the Globe" serves as the trigger
TRIGGER
the student presents the results in display form
PRODUCT
CLARIFICATION
the teacher clarifies the purpose of the exercise through the student sheet
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the data source is the globe
the student analyses the grouped data and gives each group an appropriate title
COLLECTION AND ORGANIZATION OF DATA
the student collects data from the globe; each item is recorded on an index card; the data is organized by grouping similar items together

SUGGESTIONS FOR THE TEACHER

- the student may work on the exercise individually or in groups
- give out "Investigating Canada Using the Globe — Student Worksheet" which explains the steps in the assignment
- have the student suggest what he/she can say about Canada by looking at the globe; discuss several observations so that the student is clear as to what he/she is to do

  e.g., Canada is bordered by three oceans; the Pacific to the west, the Atlantic to the east and the Arctic to the north.

  Canada is located in the western hemisphere.
- make sure that the student records the observations on index cards; it is essential that only one point is written on each card
- throughout the exercise, encourage the student to make a variety of observations, i.e., finding out what place is on the opposite side of the globe from the place where he/she lives; places sharing the same latitude or the same longitude, etc.
- to help the student sort the observations, instruct him/her to lay out the cards on a desk and "match-up" those which might go together
- it is a good idea to have the student organize the data several different ways before formalizing the groups
- have the student create a display to show his/her organized data
- to produce the display, provide the student with Bristol board/newsprint/construction paper, glue and marking pens
- instruct the student to use the grouped index cards as the basis of the display
- distribute "Investigating Canada Using the Globe — Marking Guide" BEFORE the display is completed so that the student knows what is being evaluated
- after completing the display, have the student complete "Investigating Canada Using the Globe — Follow-up Sheet"
- when the student is collecting the data, organizing the data and preparing the display, give the student as little direction as possible; remember, each display sheet should be unique with different information arranged in different ways

EVALUATION OF PRODUCT

- the display sheet may be evaluated by the teacher using the marking guide

MONITORING OF PROCESS

- the process may be monitored by having the student complete the follow-up sheet

ADDITIONAL IDEAS

- have the students use the marking guide to check each other's work
- make up a class summary sheet containing information that the class feels is important "to know" about Canada; use this body of material for content-testing purposes
- use the completed display sheets as the basis of a class discussion on what constitutes a "good" display; however, this should only be done if the teacher and/or student is able to identify something *positive* about each display, as well as suggesting an improvement
- use this exercise as a springboard to an exercise where the student chooses a number of the observations about Canada and investigates whether or not each is an advantage/ disadvantage for Canada

INVESTIGATING CANADA, USING THE GLOBE
— STUDENT WORKSHEET —

PART A

1. Using the globe as your only source of information, make statements about Canada based on your observations.
2. Write each observation in sentence form on an index card. Be sure to put only one observation on each card.
3. Prepare a minimum of 25 cards.

PART B

1. When you have finished preparing your cards, lay out the cards on your desk. Match the cards that seem to go together.
2. Decide on an appropriate title for each group of cards. (HINT: the title should tell you something about the cards you have grouped together.)
3. Using the cards as they have been organized, create a display sheet.
4. Give your display an appropriate overall title.

INVESTIGATING CANADA, USING THE GLOBE
— MARKING GUIDE —

	low				high
1. QUANTITY OF STATEMENTS (minimum: 25 = 3 marks)	1	2	3	4	5
2. QUALITY OF STATEMENTS (the quality of your statements is based on: a) the accuracy of your statements b) how well the statements are written c) correct spelling and grammar)	1	2	3	4	5
3. ORGANIZATION OF INFORMATION (is the information organized in groups in a sensible way?)	1	2	3	4	5
4. TITLING OF GROUPS (how appropriate are the titles of your groups?)	1	2	3	4	5
5. QUALITY OF PRESENTATION (how carefully has the display sheet been prepared?)	1	2	3	4	5

COMMENTS:

TOTAL: /25

INVESTIGATING CANADA, USING THE GLOBE
— FOLLOW-UP SHEET —

PART A — "What I Learned"

1. What surprising things did you learn about Canada, from doing this assignment?

2. Of the information you collected, what do you think might be very important to remember? Why?

PART B — "How I Learned"

3. What was the source of data in this assignment?

4. How did you collect the data?

5. How did you record the data?

6. Why do you think that you were instructed to record the data in this way?

7. How many times did you organize your cards?

8. What do you think was the purpose of this assignment?

PART C — "Where do I Go From Here?"

9. You have collected information about Canada. Make a list of things that you could do with this information.

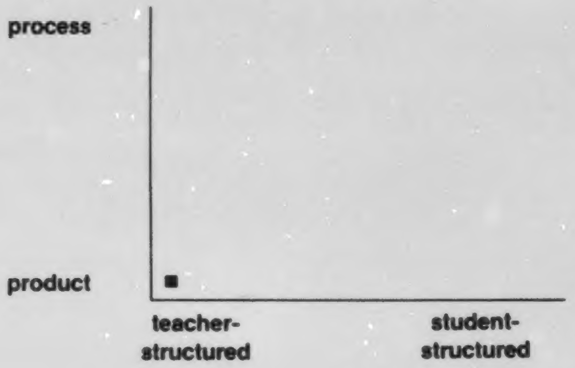
ACTIVITY 8
NATURAL RESOURCES

RATIONALE AND OBJECTIVES

Much of the curriculum outlined in the intermediate guidelines for the Canada Studies Course centres around Canada's natural resources. This exercise serves as an introduction to the concept of a natural resource.

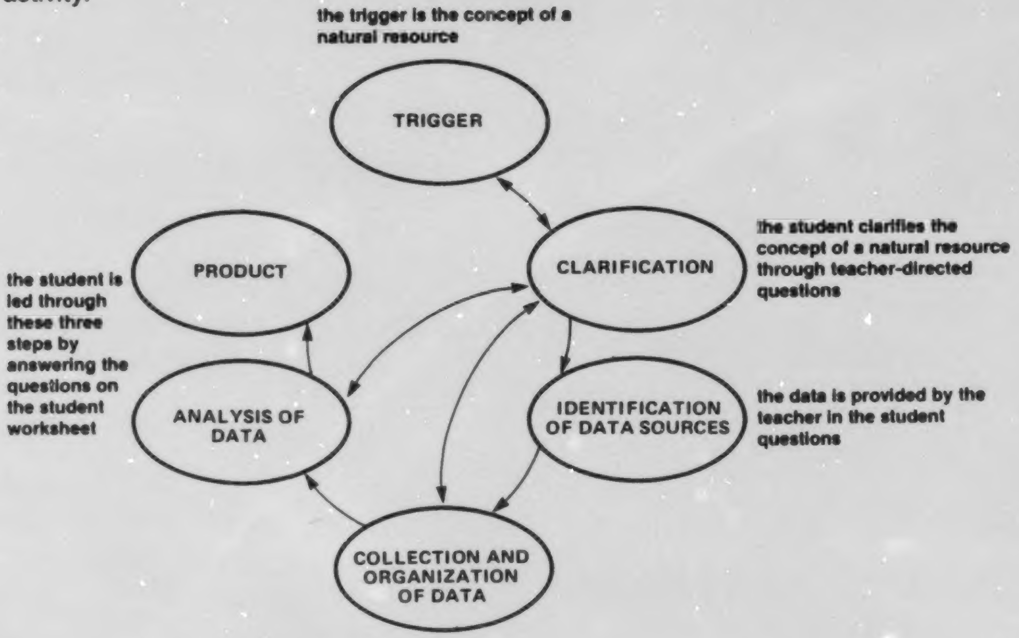
APPROACH

As presented, this activity may be placed:



- the exercise is very teacher-structured and product-oriented

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the trigger is the concept of a natural resource

the student clarifies the concept of a natural resource through teacher-directed questions

the data is provided by the teacher in the student questions

the student is led through these three steps by answering the questions on the student worksheet

SUGGESTIONS FOR THE TEACHER

- have students work through the student worksheet; you might want to discuss each question as it is finished, before moving on to the next

EVALUATION OF PRODUCT

- questions 1 to 6 may be marked

ADDITIONAL IDEAS

- instead of, or in addition to the list of words used in question 2, bring a 'grab bag' into class; the grab bag might contain stones, sand, corn, potatoes, soil, water, plastics, etc.; the same procedure can be followed, as students try to determine which of the objects or substances are natural resources

NATURAL RESOURCES
— STUDENT WORKSHEET —

1. We first need to define what a natural resource is. Of the statements below only TWO apply to ALL natural resources. Try to pick out the correct two and use them to write a simple definition of a natural resource.

A natural resource,
(1) .... is mined.
(2) .... occurs naturally in nature.
(3) .... is not alive.
(4) .... is manufactured.
(5) .... is found in Canada.
(6) .... is used by people.
(7) .... is limited in quantity.
(8) .... produces pollution.

Definition: ____________________

____

____

2. Based on your definition, decide which of the items below are natural resources. Circle those which are natural resources.

Water
Wheat
Soil
Sand
Steel
Fish
a Birch Tree
Paper
Leather
Oxygen
Coal
Iron Ore
a Television
the Sun
a Chevrolet
Gasoline
Rivers
People
Peaches
Aluminium

3. Some natural resources are renewable, that is they replace themselves within a person's life-time, while others are non-renewable, which means that once used, they are gone. Of the natural resources which you circled in question 2, decide whether they are renewable or non-renewable. Place them under the correct heading below.

RENEWABLE NATURAL RESOURCES **NON-RENEWABLE NATURAL RESOURCES**

4. List five important natural resources which we make use of in Canada today and which are not on the list given in Question 2.

5. List five important natural resources which the native people of Canada made use of in the sixteenth century.

6. Try to suggest items or things which might become natural resources in the future but are not considered natural resources today.

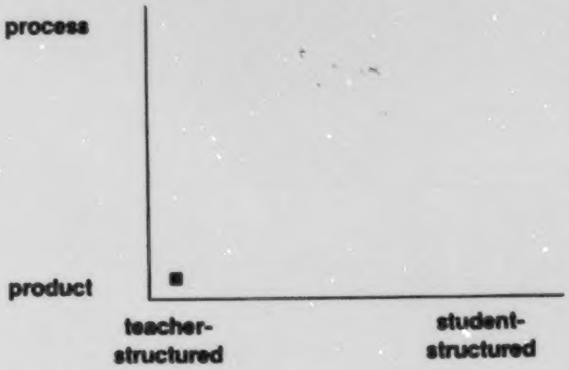
ACTIVITY 9
ALLISHA

RATIONALE AND OBJECTIVES

Students should have the skills to evaluate data. Much of what our students are exposed to in and out of classroom falls into the realm of opinion. This exercise enables students to begin to appreciate the differences between fact and opinion. It allows students to become aware that value words are often used to attempt to influence them.

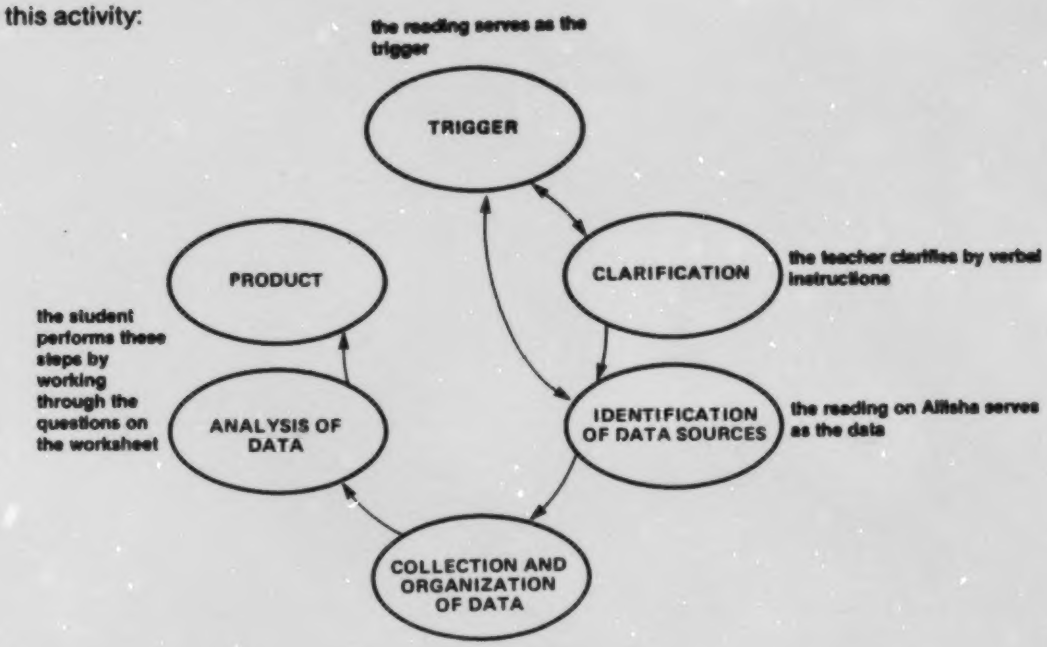
APPROACH

As presented, this activity may be placed:



- the data are given by the teacher, and the student is asked to follow a definite sequence, making this a highly teacher-structured and product-oriented lesson

In this activity:


the reading serves as the trigger
TRIGGER
CLARIFICATION
the teacher clarifies by verbal instructions
PRODUCT
the student performs these steps by working through the questions on the worksheet
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the reading on Allisha serves as the data
COLLECTION AND ORGANIZATION OF DATA

SUGGESTIONS FOR THE TEACHER

- give students the passage on Allisha and have them read it; you might want to read it together with them
- discuss the difference between facts and opinions; have students give examples to make sure they understand
- give students the worksheet to complete; to ensure that some students are not left behind you might want to discuss some of the answers before proceeding with the other questions

EVALUATION OF PRODUCT

- the worksheet serves to evaluate this exercise

MONITORING OF PROCESS

- in order to monitor or evaluate the process, choose an appropriate strategy from Appendix B

ADDITIONAL IDEAS

- travel folders or new car brochures can be brought into the class to be analysed
- a passage from a newspaper or textbook can be analysed
- if video tape is available, television commercials can be analysed

ALLISHA
— STUDENT WORKSHEET —

1. Read the passage on Allisha.

2. Would you like to visit Allisha? Why?

3. Underline all the facts in the reading. Put brackets around the opinions or "value" words. Put a "?" over those words or statements about which you are unsure.

4. Give some examples of the words in the reading which are used to give you a nice feeling about Alisha.

5. Rewrite the passage including only what you have identified to be the facts about Allisha.

6. Which reading, the original or yours would be best for the tourist department of Allisha to use? Why?

7. What reading would be best for a geography project? Why?

8. Which reading would be best to use if you were deciding to spend $1500 to visit Allisha on your vacation? Why?

9. Why is it important in real life situations to be able to distinguish fact from opinion?

ALLISHA

The enchanted land of Allisha awaits your visit. This lovely island, located 5° south of the equator, enjoys the world's finest climate. Warm sunny days with temperatures above 30° C are followed by pleasant nights.

Hundreds of kilometres of tropical beaches provide endless swimming and boating fun. Beautiful safe coral reefs are within swimming distance. The pure white sand of our beaches is unequalled anywhere in the tropics. The breathtaking beauty of the sun setting into the sea must be seen to be believed.

Allisha is inhabited by friendly people who welcome visitors to their island. Eight hundred comfortable guest rooms are available at our island's hotel. Most rooms are modern, with up-to-date services. Seventy percent of these have air conditioning. Six tennis courts, a large outdoor pool, and a nine-hole golf course surround the hotel. Motor scooters and bicycles are available if you wish to explore our villages and island roads. A journey inland from the coast places you in a jungle paradise. Over 80 varieties of birds and many interesting flowering plants can be seen.

Delightful food, friendly people and reasonably priced, comfortable rooms will combine to make your stay in Allisha your best vacation ever. Contact your travel agent now and come visit us.

ACTIVITY 10
UNEQUAL RESOURCES

INTRODUCTION

Simulation games allow for a good deal of student control over the process. The following simulation game was provided by Carl Larsen of East York Collegiate Institute.

RATIONALE AND OBJECTIVES

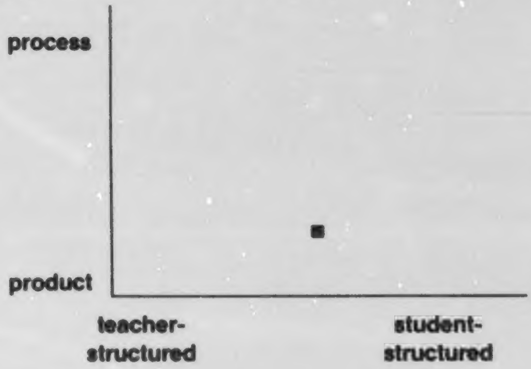
The quantity and quality of human and natural resources distributed throughout the world are most unequal. Some nations are blessed with a rich resource base and a skilled technological society capable of its exploitation. Other countries lack not only the physical resources but perhaps more importantly, the human skills necessary to develop a prosperous economy. The majority of nations fall somewhere between these two extremes.

This geography simulation game attempts to help students to understand this inequality better and to learn how nations trade for products which they need.

The specific objective of this game is to complete a task, the building of a ten link paper chain, in as short a period of time as possible. This task is to be completed, using the physical resources and human talents of ten different groups in the class.

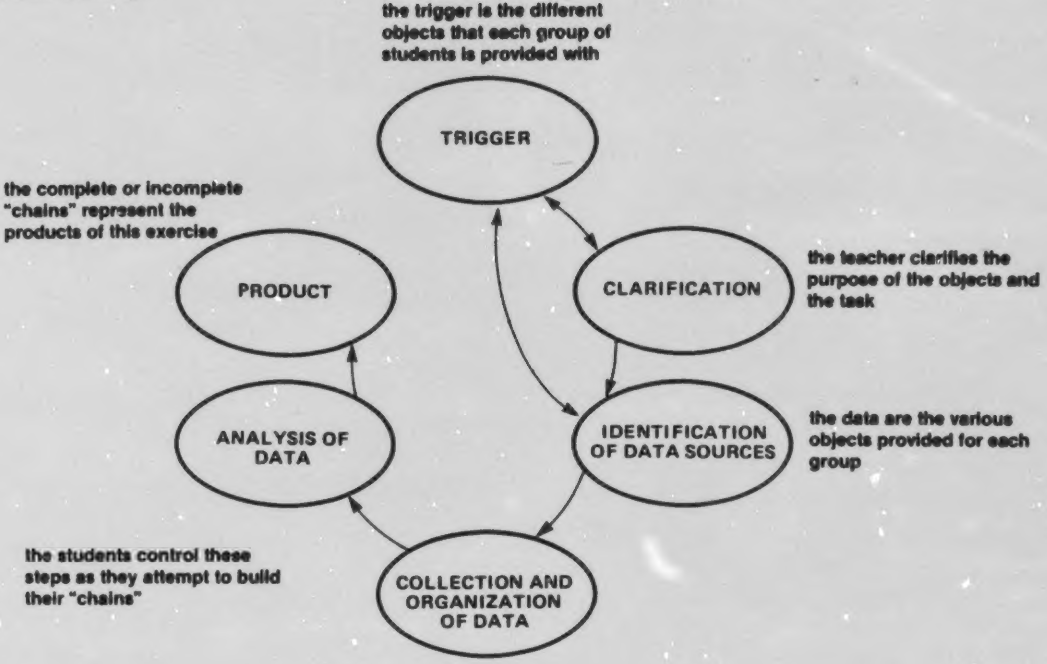
APPROACH

As presented, this activity may be placed:



- the teacher provides the data and clarifies the task for the student
- the student(s) decides on how best to collect and organize the data in order to arrive at the desired product

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the trigger is the different objects that each group of students is provided with

the complete or incomplete "chains" represent the products of this exercise

the teacher clarifies the purpose of the objects and the task

the data are the various objects provided for each group

the students control these steps as they attempt to build their "chains"

SUGGESTIONS FOR THE TEACHER

- assemble the resources needed for the game into ten large separate envelopes as follows; use at least 10 different colours of paper

envelope 1	3 differently coloured pieces of paper (22 cm x 28 cm) a glue bottle, paper clips (20), a marker, and a pair of scissors
envelope 2	2 differently coloured pieces of paper, paper clips, a stapler, a marker, and a ruler
envelope 3	1 piece of coloured paper, scotch tape, glue, and a ruler
envelope 4	1 piece of paper, scotch tape and a ruler
envelope 5	1 piece of coloured paper, a stapler, and a pair of scissors
envelope 6	5 differently coloured pieces of paper, a marker, and a pair of scissors
envelope 7	2 pieces of differently coloured paper, glue, and paper clips (10)
envelope 8	2 pieces of differently coloured paper, glue, and scissors
envelope 9	1 piece of coloured paper
envelope 10	1 piece of coloured paper

- divide the class into ten different groups, each group made up of a different number of students; each group represents a different country; in a class of 25, the following number of students is suggested for each group or country:
    - envelope 1 — received by two students
    - envelope 2 — received by five students
    - envelope 3 — received by three students
    - envelope 4 — received by one student
    - envelope 5 — received by one student
    - envelope 6 — received by one student
    - envelope 7 — received by three students
    - envelope 8 — received by six students
    - envelope 9 — received by two students
    - envelope 10 — received by one student
- give the appropriate envelope to each group of students; make sure that the students do not have any outside resources available to them
- give each group of students the student worksheet that explains the task; allow 20 to 25 minutes for completing the task
- as countries finish the task, place their number on the board with the time it took them to finish
- as with most simulation games the post-game discussion is the critical step in the exercise; the following questions are suggestions which will help you to effectively analyse the game:
    - what is a resource?
    - in what ways was the game similar to the real world?
    - were all the resources in class used?
    - was it possible for all countries to achieve their goals?
    - what trading tactics did your country use?
    - what kinds of feelings were present as some countries were successful while others failed?
    - what would you do differently the next time you played the game?

EVALUATION OF PRODUCT

- you might want to have the students answer some of the above questions printed on a question sheet which could then be marked

MONITORING OF PROCESS

- students should be given credit for participating in the game and attempting to complete the task

UNEQUAL RESOURCES
— STUDENT WORKSHEET —

Your country (group) is to complete the following task using the resources your envelope contains, plus any other resources you can obtain from other groups by trading.

THE TASK

Your task is to construct, in as short a time as possible, a ten link paper chain.

1. Each link in the chain must be made from a different colour of paper.
2. Each link must be connected using at least one each of the following: staples, paper clips, glue and scotch tape.
3. All paper must be cut using scissors, and the width of each link must be 7.5 cm (+/– 0.5 cm for quality control)
4. The names of all group members must be put on one link using a marker pen.

ACTIVITY 11
SPRINGFIELD SIMULATION

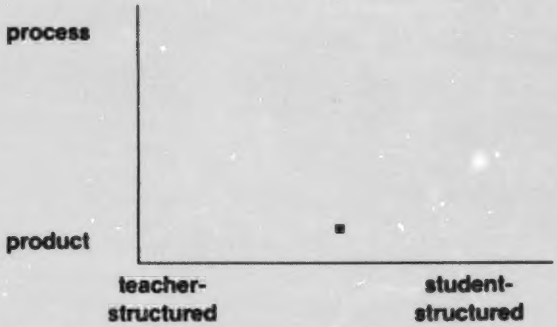
RATIONALE AND OBJECTIVES

Students should realize the importance of different viewpoints that can be observed in disputes regarding such developments as the building of expressways, airports, shopping centres, waste disposal sites, etc. It is difficult to understand these differences until the reasons behind the various veiwpoints are understood.

This exercise demonstrates that the actions of a given interest group are a reflection of its values and priorities.

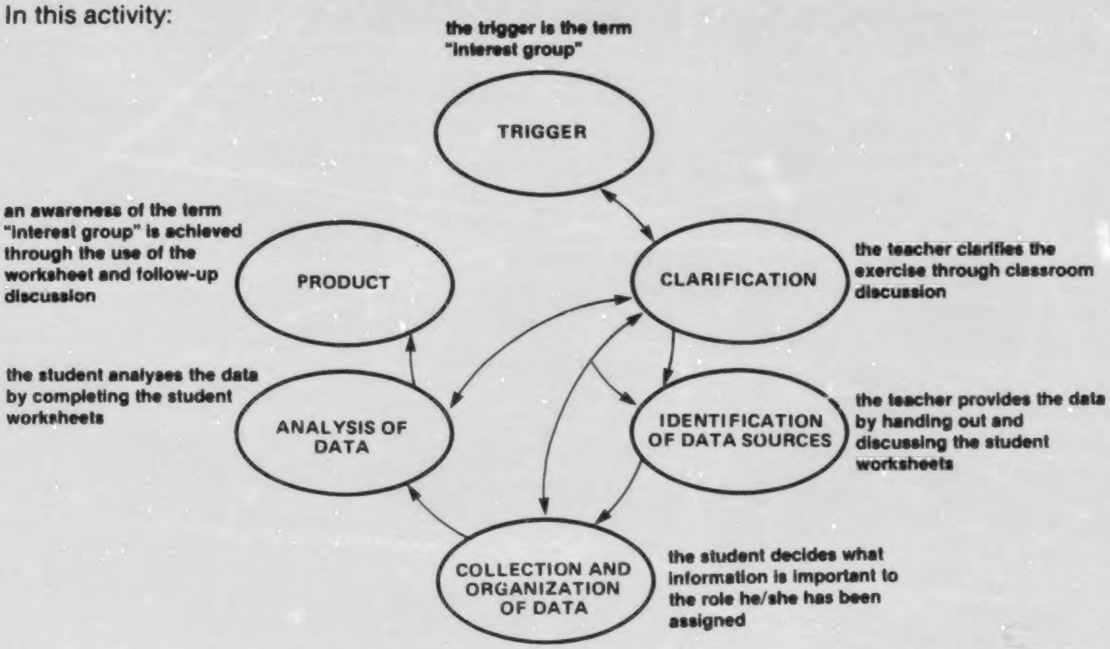
APPROACH

As presented, this activity may be placed:



- the data are provided by the teacher
- the student organizes and analyses the data within the framework set up by the worksheet
- if a process monitoring technique is used (Appendix B) the student would become more aware of how the exercise was completed

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the trigger is the term "interest group"

the teacher clarifies the exercise through classroom discussion

the teacher provides the data by handing out and discussing the student worksheets

the student decides what information is important to the role he/she has been assigned

the student analyses the data by completing the student worksheets

an awareness of the term "interest group" is achieved through the use of the worksheet and follow-up discussion

SUGGESTIONS FOR THE TEACHER

- the teacher introduces the term "interest group" and develops the idea that the way a person acts is often determined by the values and priorities of the interest group to which he/she belongs
- the teacher provides the student with data sheets I and II and the student worksheet, and clarifies the assignment
- a role is assigned to each student by the teacher; it may be necessary at this point to introduce some of the values and priorities which would influence the different roles, e.g., safety, cheap land, future expansion, profit potential, environmental impact, re-election, etc.
- the student completes the worksheet
- the teacher should initiate a post-exercise discussion to reinforce the objectives of this simulation

EVALUATION OF PRODUCT

- the worksheet can be evaluated

MONITORING OF PROCESS

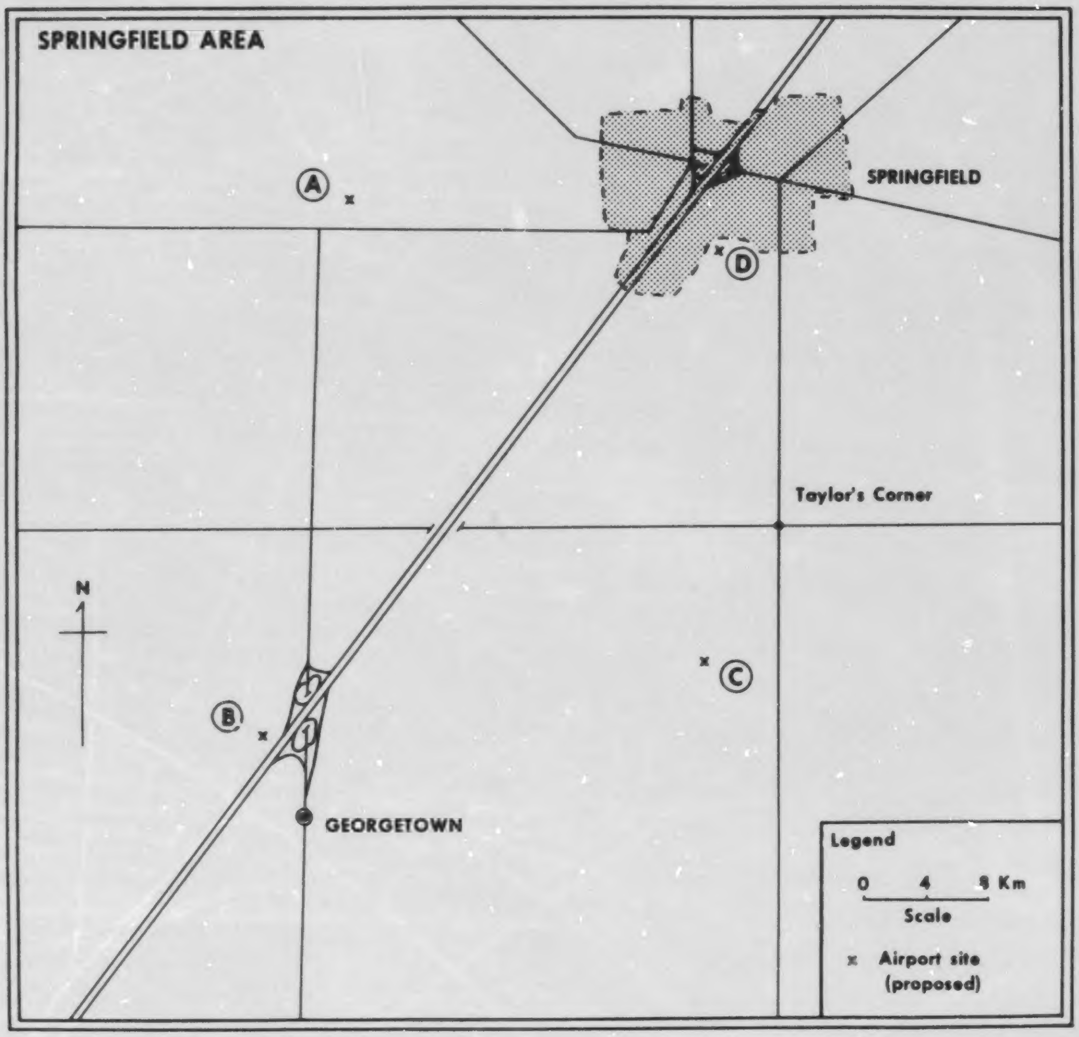
- in order to monitor or evaluate the process, choose an appropriate strategy from Appendix B

ADDITIONAL IDEAS

- allow students to work in groups to broaden the awareness of a given role; the goal of the group should be to reach a consensus on the airport site; the group should contain one member from each interest group
- let students choose their own role
- organize the presentations in the form of debates; as a debating partner, a student can find one other person who has a different role than himself/herself but who agrees on the airport site

SPRINGFIELD SIMULATION
— DATA SHEET I —

The Springfield area requires an updated improved airport. Many sites were taken into consideration. Only four are now being considered. Your task will be to study the information provided and answer the questions which follow based on the "role" you are assigned. Although Springfield is an imaginary place, their type of problem often occurs in the real world.



SPRINGFIELD SIMULATION
— DATA SHEET II —

GENERAL INFORMATION

- Springfield is a growing city with a population of 500 000
- Georgetown is a depressed town of approximately 20 000
- highway construction costs are $1 000 000 per km
- the airport development is to be financed 90% through Federal Government grants; the remaining financial commitment is to come from the local county taxes
- both Springfield and Georgetown are in the same county
- all proposed airport sites are on level ground

SITE A

- this site is located 15 km from Springfield on the best farmland in the county
- this site is located 40 km from Georgetown
- the cost of land is $20 000/ha
- the total area of land available at the site is 1000 ha
- an access road is required

SITE B

- this site is located 40 km from Springfield
- this site is located 5 km from Georgetown
- the area is now used for mixed agricultural purposes but it is not as good as the land at site A
- a major highway, which runs between Georgetown and Springfield, is now in existence nearby
- the cost of land is $15 000/ha
- the total area of land available at the site is 1000 ha

SITE C

- this site is located 20 km from Springfield
- this site is located 20 km from Georgetown
- the land is now in scrub forest
- the cost of the land is $10 000/ha
- the total area of land available at the site is 1200 ha
- an access road is required

SITE D

- this site contains the existing airport and is 5 km from central Springfield and 45 km from Georgetown
- this present airport is located on 500 ha of land and is severely overcrowded; it requires an additional 500 ha of land to bring it up to modern standards
- the cost of the available surrounding land is $50 000/ha
- all services are in place, including a major highway

ROLES

- an airport executive
- a land developer
- the mayor of Georgetown
- a local farmer
- the local Member of Parliament
- an environmentalist

SPRINGFIELD SIMULATION
— STUDENT WORKSHEET —

Questions 1 to 4 should be answered by pretending that you are the person whose role you have assumed.

1. List three characteristics of yourself.

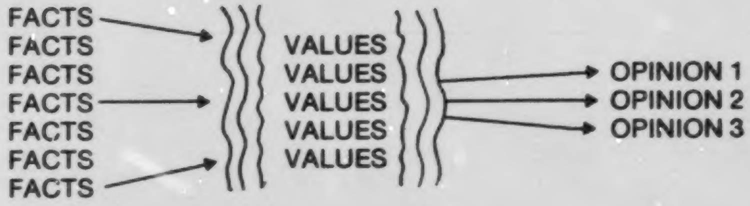
2. Which airport site do you prefer? Why?

3. Which of the other people (roles) would most likely support your choice for an airport site? Why?

4. Which of the other people (roles) would most likely oppose your choice for an airport site? Why?

5. What have you learned about conflicts in the real world by doing this exercise?

6. Explain what the following flow diagram means.



ACTIVITY 12
FOREIGN OWNERSHIP

INTRODUCTION

The following exercise concerns an issue. An issue is a topic about which there is disagreement. Issues which we deal with in our geography classrooms may be divided into those of a policy nature and those of an environmental nature. Some examples of issues which might arise in our Canadian geography courses are:

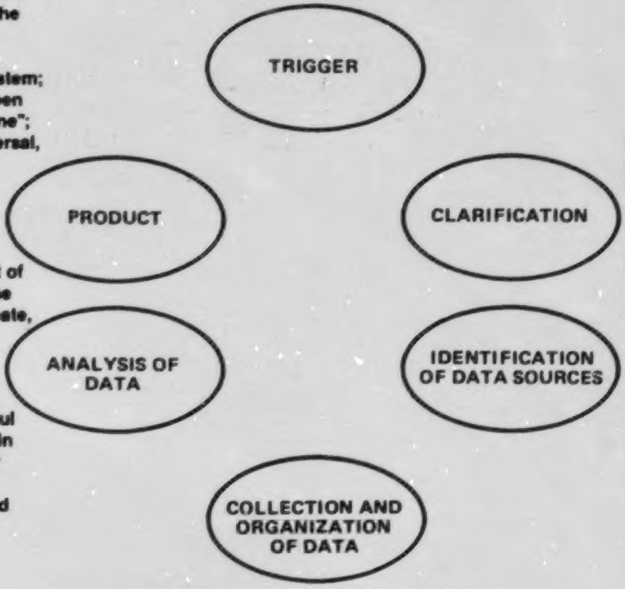
Policy Issues

- foreign ownership
- zoning bylaws
- native land claims
- tariffs and quotas
- energy policies
- CRTC rulings
- the Crow Rate

Environmental Issues

- disposal of nuclear wastes
- urban encroachment on farmland
- impact of hydro-electric projects
- disposal of chemical wastes
- effects of strip mining
- morality of the seal hunt
- building of expressways

The process diagram below includes general suggestions which may serve as a guide for approaching issues in our classrooms.


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

in terms of a product, the student can reach his/her own opinion; any opinion or conclusion is based on the "facts" as they are internalized through a person's own VALUE system; the opinion should be seen as not being "cast in stone"; for example, try role reversal, carry an opinion to the extreme, etc.

the trigger should be introduced by a "grabber" — a film, a slide, a newspaper article, a dramatization, a set of statistics, etc.

in the clarification stage the students need to see the topic as an issue; in other words, why are people disagreeing?, all terms which might arise in the study of the issue should be defined.

the student should be actively involved in the analysis and assessment of the data; this can be done through the use of a debate, a role play, etc.

the data need to be teacher-directed unless students are fairly sophisticated; the teacher needs to be aware of how indoctrination occurs — by presentation, by omission, by faulty data, etc.

teachers should be careful here that all alternatives in terms of opinions and/or courses of action are identified and understood

in the collection and organization of data, fact should be separated from opinion (see Activity 9); the source of the data needs to be judged; the data can be organized through a chart, a list, etc.

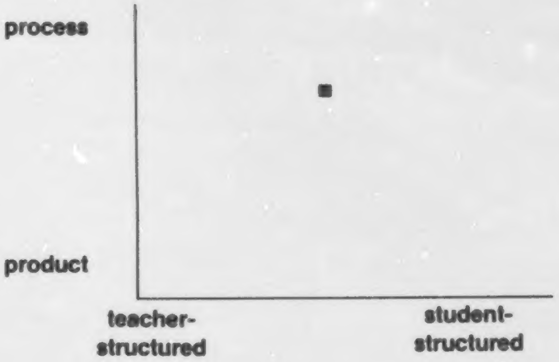
ACTIVITY 12
FOREIGN OWNERSHIP

RATIONALE AND OBJECTIVES

Foreign ownership is an important issue in any study of Canadian industry. Having completed this exercise, students will be able to recognize why foreign ownership is an issue and will be able to identify the major arguments on both sides of the issue.

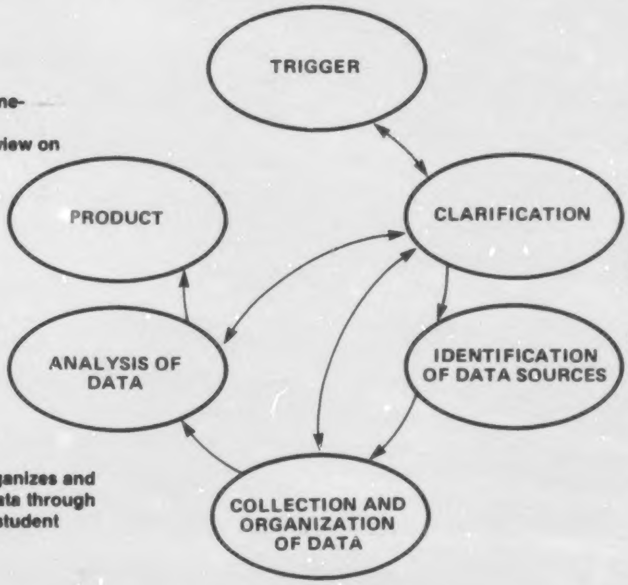
APPROACH

As presented, this activity may be placed:



- the student is given some freedom in the data organization, data analysis, and presentation stages of the exercise
- the teacher clarifies and provides the data for the exercise
- the follow-up sheet is used to make students aware of the steps they worked through in order to arrive at their product

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the trigger is a chart showing the degree of foreign ownership in various Canadian industries

the initial clarification is carried out by the teacher through the use of classroom questioning and discussion; the student clarifies further through the use of his/her classmates and the student worksheet

the source of data is the two readings on foreign ownership provided by the teacher

the student organizes and analyses the data through the use of the student worksheet

the student writes a one-page opinion essay summarizing his/her view on foreign ownership

SUGGESTIONS FOR THE TEACHER

- begin with a discussion of the chart showing the degree of foreign ownership in various Canadian industries; questions which may be asked would include, "Why do you think this situation exists?" "Do you think that this is a situation which exists in most countries?"
- introduce the government organization FIRA (Foreign Investment Review Agency); questions could include, "Why do some people feel that FIRA is necessary?", "Why do some people feel that FIRA should be abolished?"
- attempt to personalize the issue; questions could include, "If you were a worker at Ford Oakville, how might you feel about foreign ownership?", "If you were an independent Canadian grocer, how would you feel?"
- hand out "Foreign Ownership-Readings" and have the students complete the student worksheet
- summarize the opinions in class concerning the issue; a discussion of why everyone's opinion was not the same leads into an examination of people's value systems
- review the process that was worked through in order to arrive at the students' opinions

EVALUATION OF PRODUCT

- the opinion essay can be marked in terms of how complete, how logical, and how well written it is

MONITORING OF PROCESS

- have the student complete the follow-up sheet
- the question "How might we have examined foreign ownership differently?" can be discussed

ADDITIONAL IDEAS

- the data source could be less directed; allow students to use various texts, the resource centre, newspapers, interviews, etc. in order to gather their data
- cover the issue in the form of a debate
- put the class in the position of FIRA and provide them with a "take-over" application which they must decide to approve or reject

FOREIGN OWNERSHIP
— STATISTICS —

Percentage of Foreign-Owned Assets in Selected Industries in Canada, 1978*

INDUSTRY	% CANADIAN	% FOREIGN
Rubber Products	7	93
Food	62	38
Textile Mills	42	58
Petroleum & Coal Products	17	83
Transportation Equipment	26	74
Chemicals and Chemical Products	32	68
Machinery	39	61
Electrical Products	33	67
Paper and Allied Products	61	39
Non-metallic Minerals	28	72
Beverage	68	32
Miscellaneous Manufacturing	52	48

* Source: Data from Corporations and Labour Union Returns Division, Statistics Canada

FOREIGN OWNERSHIP
— READINGS —

Why Foreign Ownership is Good for Canada — A speech by US Senator Tex McDonald

Canadians who complain about foreign ownership make me sick. By building our branch plants in Canada, we Americans have guaranteed Canadians a high standard of living. Without our investment Canada would still be a poor, undeveloped country. Our companies provide Canadians with jobs which pay high wages. These people spend their wages on many different products. This in turn helps other companies — many of which are Canadian.

We provide American expertise and know-how to these companies in Canada, making them modern and competitive. These companies pay high taxes which the Canadian government can use to help Canadians. Ordinary Canadians can invest in these companies and make money from them. A large percentage of the profits of these companies are reinvested in Canada to further develop your country.

A very important point is that when our companies make their products in Canada, it means that Canada does not have to import these products from another country. Indeed, Canada can export these products and thus Canada's balance of trade is helped.

Because of our branch plants we Americans take an interest in Canada — we help you out, and if necessary we will protect you. By sharing these companies our two countries have become close friends.

Shell, Texaco, Firestone, Ford, General Motors, Burger King, General Electric — these companies are good Canadian citizens! What's good for them is good for Canada. Stop talking about silly nationalism, bury your false pride and realize that US investment and ownership in Canada is a good thing. Praise these companies, don't criticize them.

Why Foreign Ownership is Bad for Canada — A speech by Member of Parliament, Julie Wilson

New York, Chicago, Dallas, Los Angeles — why should the important decisions concerning Canada be made in the United States? At the moment, because of our branch plant economy, decisions regarding plant closure, trading partners, prices, etc. are made in the United States. Canadians are not in control of their own country.

When we allow these foreign companies to operate in Canada most of the profits leave Canada and go back to be invested in the United States. Many of these large US multinationals put smaller Canadian companies out of business. The argument that we are not big enough to have our own firms is silly. Sweden, with a much smaller population than Canada, makes two of their own cars, the Volvo and Saab, and sells them all over the world. Some Canadian businesses such as Stelco, CP, and Electrohome have proven that Canada can successfully run her own industries.

Often, US companies disregard Canadian environmental concerns. Most Americans don't even know what acid rain is! A corporate executive in Dallas does not care if his company is polluting a river in Northern Canada. In many branch plants the top managers are Americans, loyal to the United States, and not concerned with Canadian interests.

These American companies in Canada take away from our Canadian culture and identity. With all of these McDonalds and Burger Kings on every corner we might as well be in Chicago.

Why should industries from other countries get rich on Canadian resources. We have been an economic colony too long. It is time to gain control of our economy before it is too late!

FOREIGN OWNERSHIP
— STUDENT WORKSHEET —

1. In each reading, underline the FACTS presented. Put (BRACKETS) around those statements that are opinions.

2. In the chart below summarize the reasons why each individual feels the way he/she does.

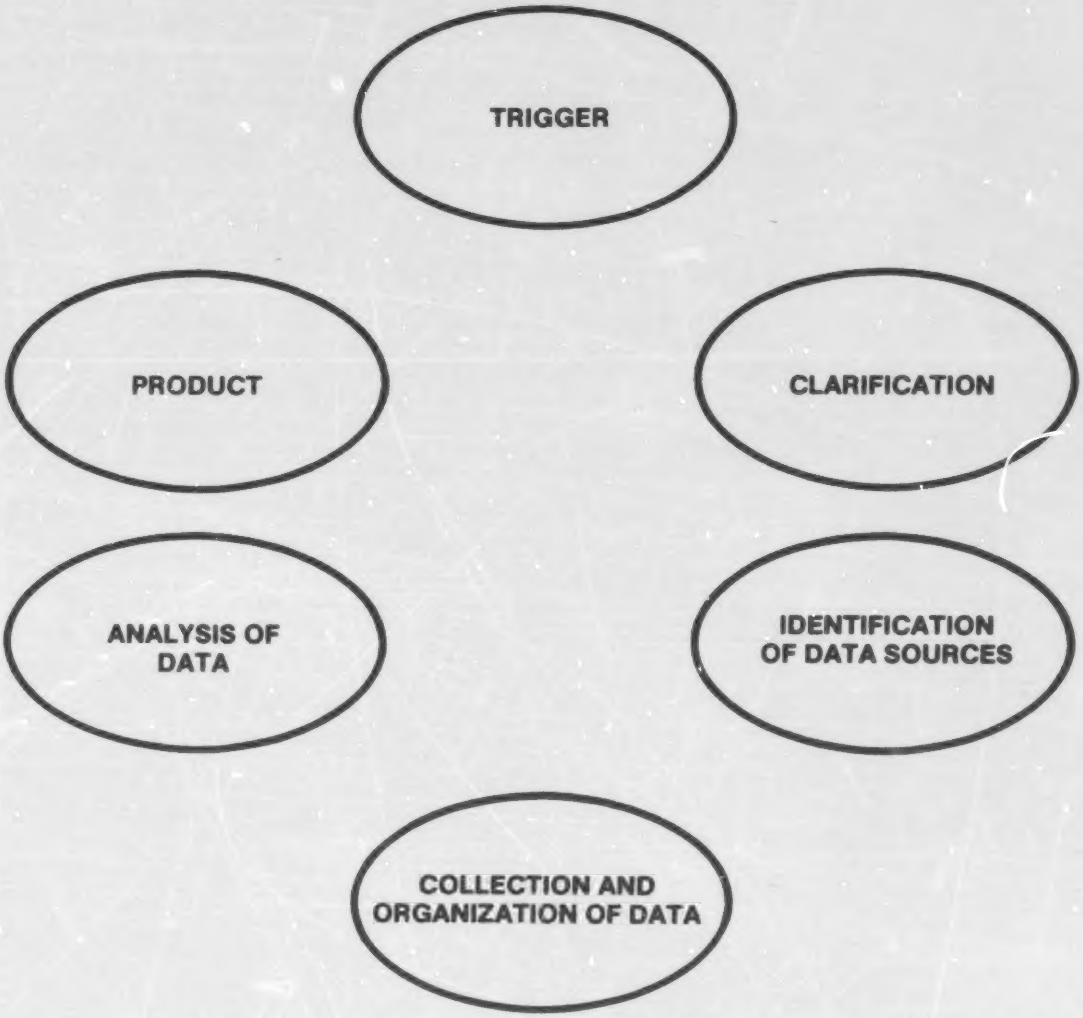
Tex McDonald — Arguments in Favour of Foreign Ownership	Julie Wilson — Arguments Against Foreign Ownership
1. 2. 3. • • • •	1. 2. 3. • • • •

3. In the above chart place a • beside each argument or point which you understand and a ? beside any argument or point which you do not fully understand. Try to find someone in the class who has a • beside a point which you have a ?. By asking questions and discussing the points, try to change all your ?s to • s. Do not proceed until you understand each point. (Teachers should allow a free 15 minute period to allow students to clarify)

4. Write a one page opinion essay expressing your views on foreign ownership. (In other words is foreign ownership good or bad for Canada?) In your essay, point out the two arguments from the other side of the issue which you consider to be the most convincing.

FOREIGN OWNERSHIP
— FOLLOW-UP SHEET —

Using the diagram below, fill in the steps you went through to arrive at your opinion.


TRIGGER
PRODUCT
CLARIFICATION
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

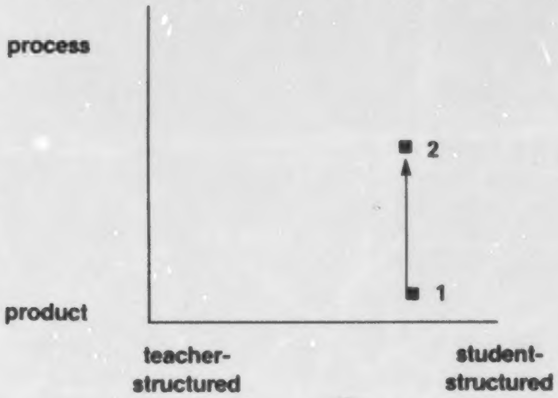
ACTIVITY 13
PRIDE IN CANADA

RATIONALE AND OBJECTIVES

Our students should be given an opportunity to acquire a knowledge of Canada and a pride in the country. This exercise can be used either as an introduction or as a conclusion to the Canadian Studies course. The exercise is intended to make use of the school's resource centre.

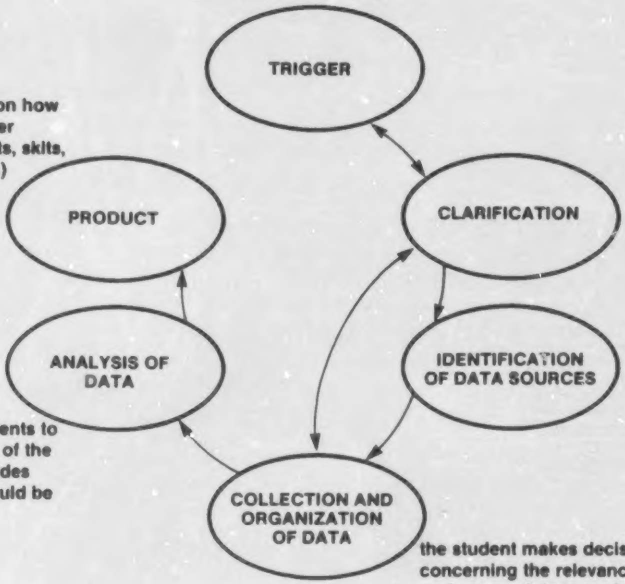
APPROACH

As presented, this activity may be placed:



- in this exercise the student identifies his/her own data sources, collects and classifies, and presents his/her information in the way he/she feels is most effective
- if the follow-up sheet is used, the exercise would move from position 1 to position 2

In this activity:


TRIGGER
CLARIFICATION
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA
ANALYSIS OF DATA
PRODUCT

the trigger is the question "why should Canadians be proud of their country?"

through a teacher led discussion the assignment is clarified for the student

student identifies appropriate data sources which allow him/her to find information concerning his/her area(s) of research

the student makes decisions concerning the relevancy and appropriateness of the data and decides how to organize it

the teacher helps students to summarize the results of the class; the student decides how his/her results could be used

the student decides on how best to present his/her findings (diagram lists, skits, graphs, pictures, etc.)

SUGGESTIONS FOR THE TEACHER

- the teacher begins with some comments about the way Canadians feel about Canada, stressing that often we either take for granted, or are not aware of things of which to be proud
- students are directed to find things in which Canadians can take pride; areas which could be researched are: the arts, the physical make-up of Canada, sports, medicine, history, etc.
- students can be given the freedom to work in any area they wish or different areas of research can be assigned to each student or group of students
- students should be encouraged to be creative in both their data sources and their presentation
- the teacher should discuss with students how the exercise is to be evaluated, prior to the collection of data
- encourage the students to use a variety of data sources, i.e., other students, parents, resource centres, things they already know, etc.
- have the students complete the follow-up sheet
- the teacher should discuss the data collected as to whether or not the data represents points of which Canadians can be proud

EVALUATION OF PRODUCT

- the originality and depth of the students research can be evaluated

MONITORING OF PROCESS

- the process monitoring takes place when the follow-up sheet is completed and evaluated

ADDITIONAL IDEAS

- design a questionnaire to test other Canadians knowledge of what you found out
- all work may be done on sheets of paper to be put up around the room
- send the results to a class overseas in order to get reactions from another country
- send the class results to a newspaper for publication

PRIDE IN CANADA
— FOLLOW-UP SHEET —

1. List the data sources you used.

2. How did you organize the data?

3. How could we have done this exercise differently?

4. What part of the exercise did you find most difficult?

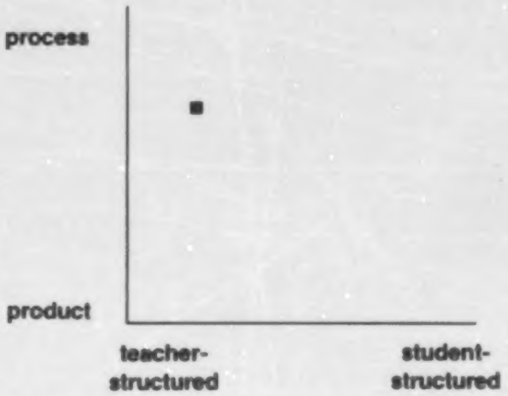
ACTIVITY 14
WHAT KIND OF A PLACE IS OUR PLACE?

RATIONALE AND OBJECTIVES

This exercise can serve as an introduction to the Canada Studies Course. The exercise helps students to form an image of the nature of the country in which they live.

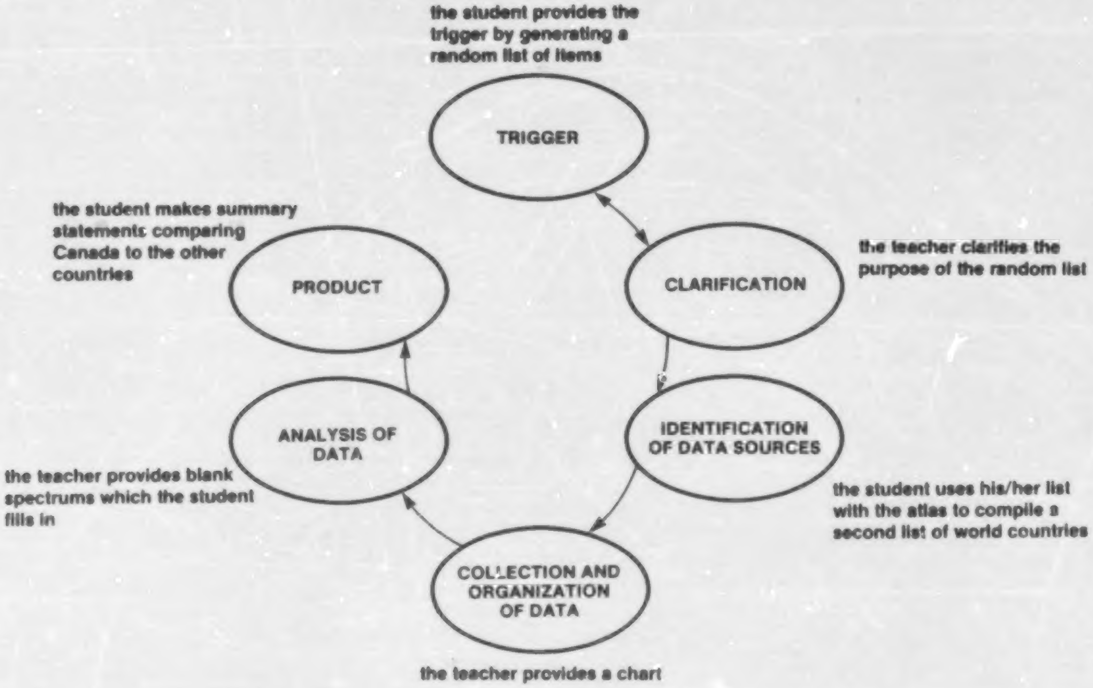
APPROACH

As presented, this activity may be placed:



- the student generates the trigger in this exercise and is then directed in each subsequent step in the process
- the follow-up sheet is used to make students aware of the process which he/she worked through

In this activity:


the student provides the trigger by generating a random list of items
TRIGGER
the student makes summary statements comparing Canada to the other countries
PRODUCT
CLARIFICATION
the teacher clarifies the purpose of the random list
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the teacher provides blank spectrums which the student fills in
the student uses his/her list with the atlas to compile a second list of world countries
COLLECTION AND ORGANIZATION OF DATA
the teacher provides a chart

SUGGESTIONS FOR THE TEACHER

- have students list the names of fifteen professional sport franchises (e.g., Argonauts, Expos, etc.); any other student-generated list could be used (movie stars, television shows, rock artists, etc.)
- using the first letter of the names of the items in his/her list the student identifies world countries that begin with that letter
- the student then uses the atlas or other resource material to complete the chart on the student worksheet
- the student uses the data collected to complete the spectrums or continuums on the handout sheet and makes a summary statement for each spectrum which compares Canada to the other countries; students may need help in making up appropriate scales for their spectrums
- work through the follow-up sheet with the students to help them become aware of the steps they took to complete the exercise; ask students how this exercise could have been done differently

EVALUATION OF PRODUCT

- the student's charts, summary statements, and spectrums can be evaluated

MONITORING OF PROCESS

- the student completes the follow-up sheet

ADDITIONAL IDEAS

- to make the data collection less tedious, have two, three, or four students divide up the list of countries and share their data in order to complete the chart
- allow students to add to their list of countries two additional ones in which they might have a particular interest

WHAT KIND OF A PLACE IS OUR PLACE?
— STUDENT WORKSHEET —

CHART OF WORLD COUNTRIES

STUDENT LIST	COUNTRIES	POPULATION OF COUNTRY (in millions)	AREA OF COUNTRY (in 10^3 km^2)	CAPITAL CITY OF THE COUNTRY	LATITUDE OF THE CAPITAL CITY (to nearest degree)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.	CANADA				

WHAT KIND OF A PLACE IS OUR PLACE?
SPECTRUMS OF WORLD COUNTRIES

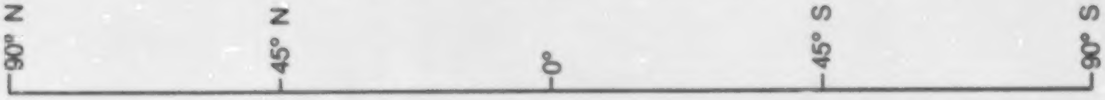
POPULATION OF WORLD COUNTRIES (IN MILLIONS)

Summary Statement:

AREA OF WORLD COUNTRIES (IN 10^3 km²)

Summary Statement:

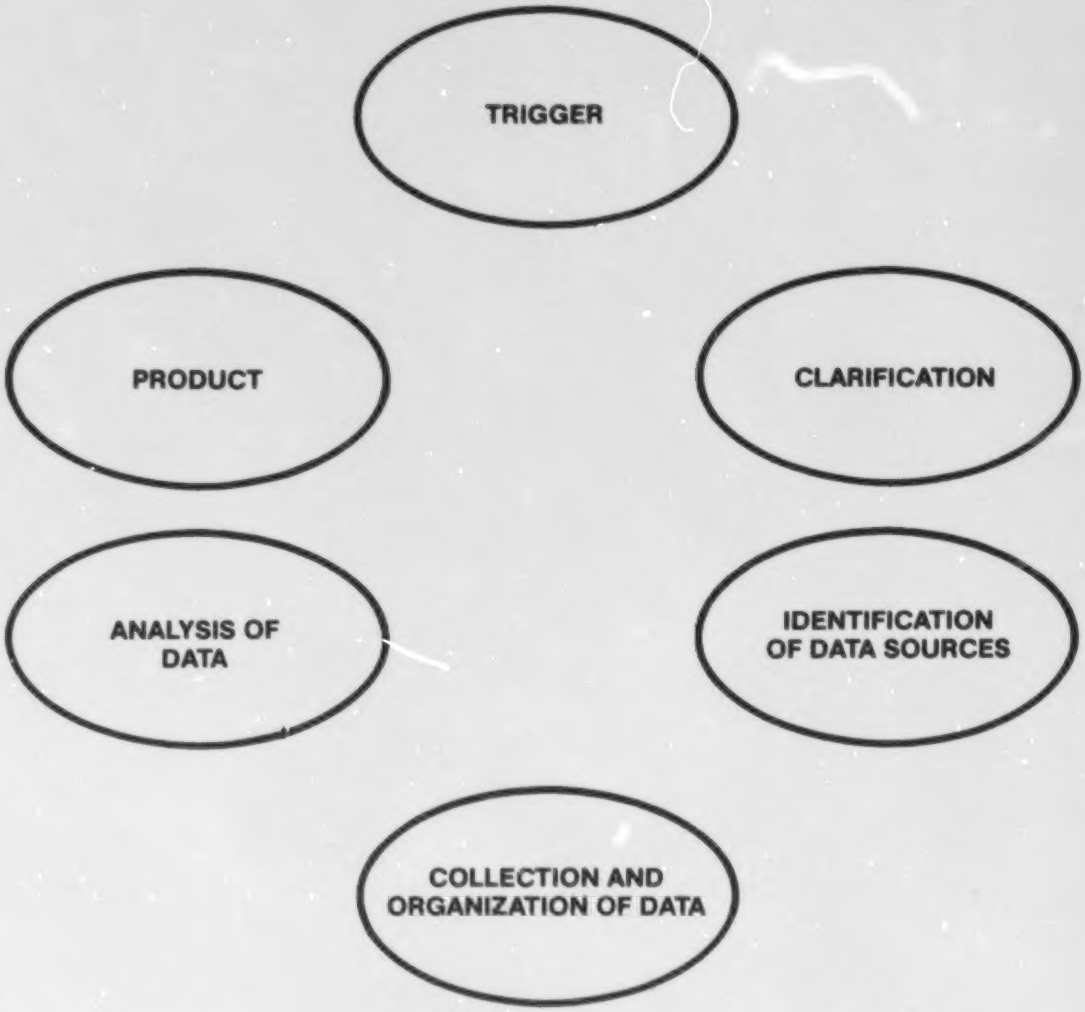
LATITUDES OF THE CAPITAL CITIES



Summary Statement:

WHAT KIND OF A PLACE IS OUR PLACE?
— FOLLOW-UP SHEET —

Using the diagram in the space below, fill in the steps you went through to arrive at your summary statements:


TRIGGER
PRODUCT
CLARIFICATION
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

ACTIVITY 15
WHAT IS A REGION?

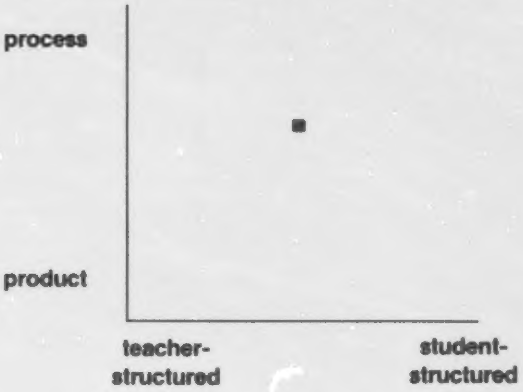
RATIONALE AND OBJECTIVES

While the term region is frequently used in geography, a student often fails to realize that a region is a useful construct. As a result, the student often tends to perceive regions as absolutes rather than convenient ways of organizing space.

To help break down any misconceptions about the nature or definition of a region, this exercise gives the student the experience of identifying, delineating, and naming regions.

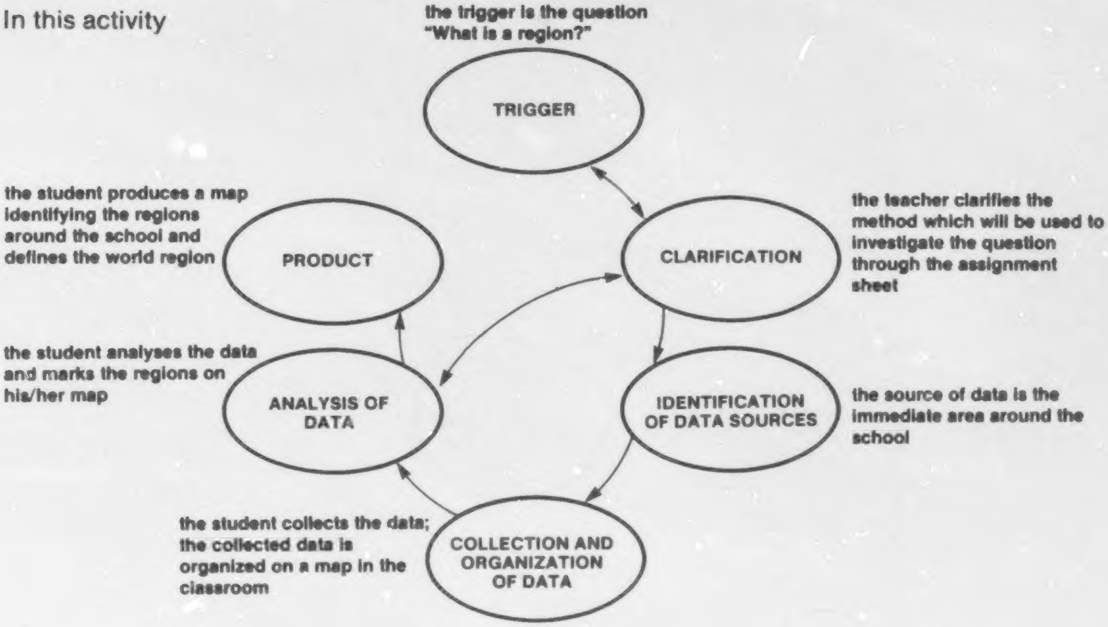
APPROACH

As presented, this activity may be placed:



- the student is working within a teacher-structured framework where the teacher has identified the source of data and indicated what the student is to do with the collected data
- the student makes decisions about collecting and recording the data (observations); the student also decides how to create the map and what to identify as a region
- by completing the follow-up sheet, the student has an opportunity to reflect on the process leading to a definition of the term "region"

In this activity


the trigger is the question "What is a region?"
TRIGGER
the teacher clarifies the method which will be used to investigate the question through the assignment sheet
CLARIFICATION
the source of data is the immediate area around the school
IDENTIFICATION OF DATA SOURCES
the student collects the data; the collected data is organized on a map in the classroom
COLLECTION AND ORGANIZATION OF DATA
the student analyses the data and marks the regions on his/her map
ANALYSIS OF DATA
the student produces a map identifying the regions around the school and defines the world region
PRODUCT

SUGGESTIONS FOR THE TEACHER

- this exercise works best if the student has had some experience in observing and recording information, classifying data and mapping data; you might consider using Activity 1: The Classroom as a Source of Data and Activity 5: Classification as introductions to this exercise
- this exercise works best if the student works individually to collect his/her data
- before giving out "What is a Region — Student Worksheet", work through a sample exercise with the class to make sure the student understands the idea of observing with all the senses
- give out "What is a Region — Student Sheet A" to each student
- before sending the student out to observe, be sure to delineate *very* specifically the area you want the student to observe; this may be done via a large sketch map showing the school and the extent of the surrounding area that you wish the student to observe
- if your school building is very irregular in shape, you may wish to designate the points from which the student should observe the selected data; again, this could be indicated on a large sketch map in the classroom
- when the student is collecting the data, encourage him/her to record the observations any way he/she wishes; i.e. graphically, visually, verbally etc.
- when the data have been collected, have each student produce four maps to illustrate his/her findings; the teacher may choose to provide the student with a base map so that there is some standardization of the scale
- when the maps have been completed, display the maps and each individual's definition of region
- after the maps and the definition have been displayed, hand out "What is a Region —Student Sheet B", use Part B to help the student compare the maps and the definitions; use "What is a Region — Follow-up" to help the student reflect on the process he/she went through to define region
- in a large class, you may wish to have the students work in groups to complete "What is a Region — Student Sheet B" and the follow-up sheet

EVALUATION OF PRODUCT

- design a marking sheet to evaluate the maps; marks could be assigned for:

  a) completeness of observations
  b) accuracy of observations
  c) transposing observations to the map
  d) identification of regions
  e) naming of regions
  f) definition
  g) . . . etc.

MONITORING OF PROCESS

- have each student complete the follow-up sheet

ADDITIONAL IDEAS

- this type of exercise may be carried out in any area; instead of using an area around the school have the student look for regions inside the school, in a department store, along a street, etc.
- after the student has completed the maps, traditional geographic land-use maps could be introduced and compared to show how the student's regions compare to the typical classification system

WHAT IS A REGION?
— STUDENT WORKSHEET A —

The first part of this exercise develops your powers of observation. Your job is to collect data by observing the area around the school. To complete the exercise, you will need a notebook, something firm to write on and a pencil. When you go outside, choose one side of the school and begin:

1. Stand with your back to the school wall and observe what is in front of you.
2. Record what your *senses* take in, i.e., what you *see*; what you *hear*; what you *smell*; what do you *feel*.
3. When you have recorded your observations on one side of the school, move on and do the same for the other sides of the school.

   HINT: you should have four sets of observations: one looking more or less north; one looking south; one looking east; and one looking west

   By the time you have finished, you will have observed the area around the entire school.
4. Bring in your results.
5. *Map* your observations.

   HINT: you should make FOUR maps — one for what you *saw*; one for what you *heard*; one for what you *smelt*; and one for what you *felt*.
6. When you have recorded your observations on the maps, divide each map into sections to show where there was a change in what you observed.
7. Each of these sections on your maps could be called a *region*. Give an appropriate name to each region.
8. Make up a definition of the word region.

WHAT IS A REGION?
— STUDENT WORKSHEET B —

Study the maps and definitions displayed in the classroom:

1. How are the maps different?

2. List some of the regions identified on the maps.

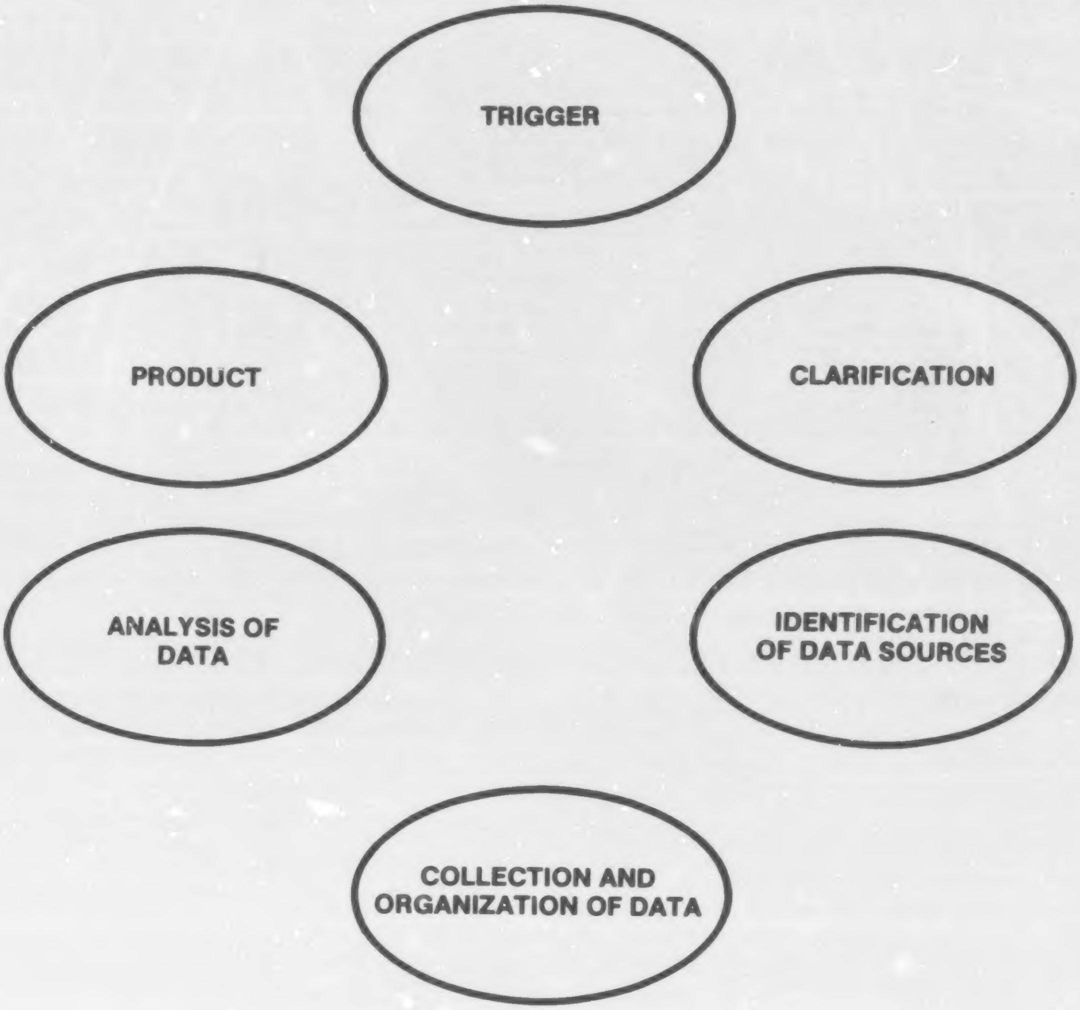
3. Which region(s) might be divided into sub-regions? Why?

4. Study the definitions of "region". Do the definitions have anything in common? What?

5. Based on your answer to # 4, make up a new definition for region".

WHAT IS A REGION?
— FOLLOW-UP SHEET —

Using the diagram in the space below, indicate the steps you went through to arrive at your definition:


TRIGGER
PRODUCT
CLARIFICATION
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
COLLECTION AND ORGANIZATION OF DATA

ACTIVITY 16
NEWSPAPER DAY

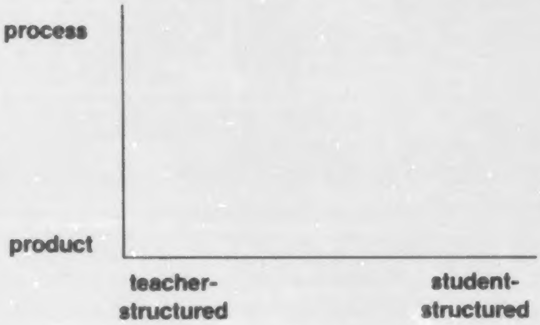
RATIONALE AND OBJECTIVES

A newspaper can provide much information about the city/town/village where it is published. While some information about a particular place may be obtained directly from feature articles, much additional data may be discovered indirectly in the classified advertisements, editorials, types of stories carried by the newspaper etc. This vast array of information has much potential in any course about Canada.

This exercise, which may be viewed as a long-term project, uses newspapers from across Canada which have the same date of publication.

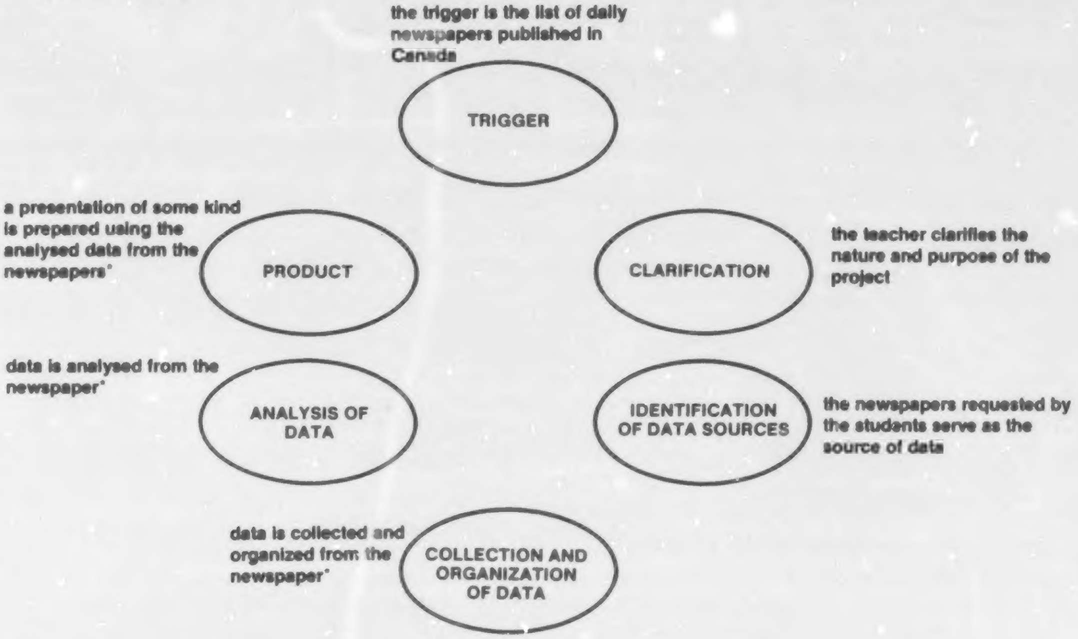
APPROACH

As presented, this activity may be placed:



- this exercise is presented without a specific approach; the materials to start the exercise are included and suggestions are made as to how to work through the exercise; however, the degree of teacher-structure and/or student-structure is left up to the teacher
- the degree to which the process is monitored is also left up to the teacher
- after an approach is chosen, try placing it on the graph

In this activity:


the trigger is the list of daily newspapers published in Canada
TRIGGER
a presentation of some kind is prepared using the analysed data from the newspapers*
PRODUCT
CLARIFICATION
the teacher clarifies the nature and purpose of the project
data is analysed from the newspaper*
ANALYSIS OF DATA
IDENTIFICATION OF DATA SOURCES
the newspapers requested by the students serve as the source of data
data is collected and organized from the newspaper*
COLLECTION AND ORGANIZATION OF DATA

*how each of these steps is to be completed depends on the approach taken by the teacher

SUGGESTIONS FOR THE TEACHER

- this exercise works best as a long-term project; i.e., use one day in class per week as "newspaper day"
- select a date about one month away from the day that you are beginning the project; this specified date (preferably falling on a Wednesday or a Saturday) will be your "Newspaper Day" as ALL newspapers to be used in the project must have this date
- to start the project, post the list of daily newspapers published in Canada and ask the student to select two newspapers from different parts of Canada that he/she would like to receive
- to prevent duplication of the newspapers, have the student sign next to the newspaper he/she would like to receive
- discuss the information that should be contained in a letter to the circulation department of a newspaper in order to ensure that the student receives the newspaper (see "Newspaper Day — Sample Letter")
- have the student compose two letters — one for each newspaper; collect the letters from the student, correct the letters and return the letters to the student
- instruct the student to recopy or type the corrected original and address an envelope to each newspaper; make sure that the envelope is addressed to the "Circulation Department"
- make sure that the student encloses 75¢ in each envelope to defray the cost of the newspaper and postage
- while waiting for the newspapers to arrive after the specified date, have the student make a study of the local newspaper; this will facilitate making comparisons between the local area and other parts of Canada
- the amount of teacher-direction given at this stage is up to the individual teacher, e.g., to structure the exercise, the teacher could prepare a worksheet for the student which would direct the student to collect specific data from the newspaper (see "Newspaper Day — Sample Student Worksheet")
- on the other hand, to have a more student-structured approach, the teacher might have the students work in groups and have each group collect information to answer an open-ended question such as "What can we learn about a place from its newspaper?"; from these data, the student, individually or in a group, could design his/her own worksheet
- when the student receives the newspapers from other parts of Canada, have him/her examine his/her newspapers
- again, the amount of teacher-structure at this stage is up to the individual teacher, e.g., if the approach is highly teacher-structured, the same worksheet used to collect information from the local paper could be used
- in a more student-structured approach, the student could use the worksheet he/she designed by looking at the local newspaper and/or looking for similarities and differences between the newspapers he/she has received and the local newspaper, e.g., the headline story, the price of the newspaper, circulation, quality of the newsprint, types of advertisements, cost of living as reflected in the advertisements, etc.

- if the student is making his/her collection of information, you may wish to encourage him/her to collect "unusual" comparative data such as content of the horoscopes, various types of columns, entertainment listings, comic strips, etc.

- when the student has finished his/her examination of the newspapers, you may wish to have him/her exchange newspapers with other members of the class; in this way, information can be shared

- the following are some suggestions as to what may be done with the collected information:
  - map/graph the comparisons
  - make up a large comparison chart summarizing the collected data
  - use the comparisons between the newspapers as the data for a student essay on the topic "Regionalism in Canada as Seen in the Newspaper"
  - create collages, i.e., use headlines from across Canada, etc.
  - have the students make displays summarizing a particular topic/theme from all the newspapers
  - etc.

- SPECIAL HINT: to keep newspapers neat, store them in the cartons from the liquor store which come with "dividers"

- to help the student become aware of the process he/she has gone through in the exercise, prepare, or have the student prepare some kind of follow-up

EVALUATION OF PRODUCT

- evaluate the final product using a teacher (or student) designed evaluation sheet

MONITORING OF PROCESS

- prepare a follow-up; refer to the strategies suggested in Appendix B

ADDITIONAL IDEAS

- send for foreign newspapers and compare them with the local newspaper

NEWSPAPER DAY
— SAMPLE LETTER —

Dear Circulation Department:

My name is ______________________________ and I am a grade ______

student at ______________________________ in ____________________ .
(name of school) (city/town/region)

In our geography class, we are studying Canada. To help us learn more about Canada, we are planning to study a variety of newspapers published on the same day across Canada. Would you please send me a copy of your newspaper dated ____________________ . It is important that the newspaper have this date so that we can compare the newspapers easily.

I am enclosing 75¢ to help cover the cost of the newspaper and the postage. Please send the newspaper to:

student's name
c/o teacher's name
school address
province
postal code

Thank you for your consideration. I am looking forward to receiving your newspaper.

Yours truly,

NEWSPAPER DAY
— SAMPLE STUDENT WORKSHEET —

Name of Newspaper:

Place of Publication:

Cost of Newspaper: Circulation:

Number of Pages: Number of Sections:

NEWS STORIES

1. Total number of news stories in the paper:
2. Number of stories which are: a) international
   b) national
   c) provincial
   d) local:
3. Main Story Headline:
4. Front page stories:

EDITORIAL

1. Topic of the editorial(s):
2. Subject of the editorial cartoon:

CLASSIFIED ADVERTISEMENTS

1. Types of jobs listed:
2. Cost of housing:
3. Number of pages for the classified advertisements:

OTHER ADVERTISEMENTS

1. Movies advertised: ______________________________

2. Television listings: ______________________________

3. Other types of entertainment: ______________________________

4. Sample food prices: ______________________________

5. Sample prices of other goods: ______________________________

6. Approximate percentage of the newspaper devoted to advertisements: ______________

OTHER INFORMATION

1. Number of comic strips: ______________________________
2. Weather forecast: ______________________________
3. Columns: ______________________________

INTERESTING OBSERVATIONS

____

NEWSPAPER DAY
— DAILY NEWSPAPERS —

DAILY NEWSPAPERS

ALBERTA

Calgary

Morning:

The Calgary Sun
830-10th Ave. SW
Calgary, Alberta
T2R 0B1

Evening:

The Herald
Southam Press,
215 16th St. SE
Calgary, Alberta

Edmonton

Morning:

The Edmonton Sun
10310-124th St.
Edmonton, Alberta
T5N 1R2

Evening:

The Edmonton Journal
Southam Press,
10006-101st St.
Edmonton, Alberta
T5J 2S6

Fort McMurray

Afternoon:

Fort McMurray Today
9701 Franklin Ave.
Fort McMurray, Alberta
T9H 3G1

Grand Prairie

Afternoon:

Daily Herald Tribune
10604-100th St.
Grand Prairie, Alberta
T8V 2M5

Lethbridge

Evening:

The Lethbridge Herald
504-7th St.
Lethbridge, Alberta
T1J 3Z7

Lloydminster

Daily Times
4828 44th St.
Lloydminster, Alberta
S9V 0G8

Medicine Hat

Evening:

News
Southam Press,
3257 Dunmore Rd. SD
Medicine Hat, Alberta

Red Deer

Evening:

Advocate
2950 Bremner Ave.
Box 520,
Red Deer, Alberta
T4N 5G3

BRITISH COLUMBIA

Cranbrook

Daily Townsman
31 7th Ave S
Cranbrook, BC
V1C 2J2

Dawson Creek

Peace River Block News
Box 108
Dawson Creek, BC
V1G 4G6

Fort St. John

Alaska Hwy. News
9916 98th St.
Fort St. John, BC
V1J 3T8

Kamloops

Evening:

Daily Sentinel
206 Seymour St.
Kamloops, BC
V2C 2E6

Kelowna

Evening:

Daily Courier
550 Doyle Ave.
Kelowna, BC
V1Y 7V1

Kimberley

The Daily Bulletin
335 Spokane St.
Kimberley, BC
V1H 2E7

Nanaimo

Evening:

Daily Free Press
225 Commercial St.
Box 69
Nanaimo, BC
V9R 5K5

Nelson

Morning:

Daily News
266 Baker St.
Nelson, BC
V1L 4H3

New Westminster

Evening:

Columbian
Box 730
New Westminster, BC
V3L 4Z7

Penticton

Evening:

Herald
186 Nanaimo Ave. W.
Penticton, BC
V2A 1N4

Port Alberni

Evening:

Alberni Valley Times
4918 Napier St.
Box 400
Port Alberni, BC
V9Y 7N1

Prince George

Evening:

The Citizen
Box 578
Prince George, BC
V2L 4T1

Prince Rupert

Evening:

Daily News
Box 580
Prince Rupert, BC
V2L 4S8

Terrace

The Daily Herald
3212 Kalum St.
Terrace, BC
V8G 2M9

Trail

Afternoon:

Times
1163 Cedar Ave.
Trail, BC
V1R 4B8

Vancouver

Evening: *Sun*
Morning: *Province*

Sun Province
2250 Granville St.
Vancouver, BC
V6H 3G2

Vernon

Evening:

Daily News
3309-31st Ave.
Vernon, BC
V1T 2G7

Victoria

Morning and Evening:

Times Colonist
Box 300
Victoria, BC
V8W 2N4

MANITOBA

Brandon

Evening:

The Brandon Sun
501 Rosser Ave.
Brandon, Manitoba
R7A 5Z6

Dauphin

Daily Bulletin
120-1st Ave. NE
Dauphin, Manitoba
R7N 1A5

Flin Flon

Evening:

Reminder
Box 727
Flin Flon, Manitoba
R8A 1N5

Portage La Prairie

Evening:

Daily Graphic

Box 130
Portage La Prairie,
Manitoba
R1N 3B4

Roblin

The News
Box 299, 182 Main St.
Roblin, Manitoba
R0L 1P0

Swan River

Report
Box 1629
Swan River, Manitoba
R0L 1Z0

Thompson

Evening:

Citizen
Box 887
Thompson, Manitoba
R8N 1N8

Winnipeg

Evening:

Free Press
300 Carlton St.
Winnipeg, Manitoba
R3C 3C1

Morning:

The Winnipeg Sun

#100, 290 Garry St.
Winnipeg, Manitoba
R3C 1H3

NEW BRUNSWICK

Fredericton

Evening:

Gleaner
Box 3370,
Fredericton, NB
E3B 5A2

Moncton

Morning:

L'Evangeline
80 Church St.
Moncton, NB

Morning: *Times*
Evening: *Transcript*

Times and Transcript
Box 1001
Moncton, NB
E1C 8P3

Saint John and Lancaster

Morning: *The Telegraph Journal*
Evening: *The Evening Times*

The Telegraph Journal/
The Evening Times-Globe
Crown St. at Union
Saint John, NB
E2L 3V8

NEWFOUNDLAND

Corner Brook

Evening:

The Western Star
Box 460
Corner Brook, Nfld.
A2H 6E7

St. John's

Morning:

The Daily News
Box 8835, Stn. A
St. John's Nfld.
A1B 3V2

Evening:

Telegram
273 Duckworth St.
St. John's, Nfld.
A1C 5X7

NOVA SCOTIA

Amherst

Morning:

Daily News
Box 280
Amherst, NS
B4H 3Z2

Halifax

Morning:

The Chronicle-Herald
1650 Argyle St.
Halifax, NS
B3J 2T2

Evening:

The Mail-Star
1650 Argyle St.,
Halifax, NS
B3J 2T2

New Glasgow

Evening:

The Evening News
352 E. River Road
New Glasgow, NS
B2H 5E2

Sackville

Bedford-Sackville Daily News
446 Main Hwy.
Lower Sackville, NS
B4C 2S9

Sydney

Evening:

Cape Breton Post
75 Dorchester St.
Sydney, NS
B1P 6K6

Truro

Evening:

The Daily News
6 Louise St.
Truro, NS
B2N 5C3

ONTARIO

Barrie

Evening:

Examiner
16 Bayfield St.
Barrie, Ont.
L4M 4T6

Belleville

Evening:

The Intelligencer
45 Bridge St. E.
Belleville, Ont.
K8N 1L5

Brampton

Evening:

Daily Times
33 Queen St. W.
Brampton, Ont.
L6Y 1M1

Brantford

Evening:

Expositor
53 Dalhousie St.
Brantford, Ont.
N3T 5S8

Brockville

Evening:

Recorder and Times
23 King St. W.
Box 10
Brockville, Ont.
K6V 5T8

Cambridge-Galt

Evening:

Daily Reporter
26 Ainslie St. S.
Cambridge, Ont.
N1R 3K1

Chatham

Evening:

Daily News
45 Fourth St.
Box 2007
Chatham, Ont.
N7M 2G4

Cobourg

Afternoon:

Daily Star
415 King St. W.
Cobourg, Ont.
K9A 3P9

Cornwall

Afternoon:
Standard-Freeholder
44 Pitt St.
Cornwall, Ont.
K6J 3P3

Fort Frances

Daily Bulletin
Box 339
Fort Frances, Ont.

Guelph

Evening:
Mercury
8-14 Macdonnell St.
Guelph, Ont.
N1H 6P7

Hamilton

Evening:

Spectator
44 Frid St.
Hamilton, Ont.
L8N 3G3

Kenora

Evening:

Daily Miner and News
33 Main St. S
Box 1620
Kenora, Ont.
P9N 3X7

Kingston

Evening:

Whig Standard
306 King St.
Kingston, Ont
K7L 4Z7

Kirkland Lake

Evening:

Northern Daily News
8 Duncan Ave.
Kirkland Lake, Ont.
P2N 3L4

Kitchener

Afternoon:

Kitchener-Waterloo Record
225 Fairway Rd. S.
Kitchener, Ont.
N2G 4E5

Lindsay

Evening:

Post
15 William St. N.
Lindsay, Ont.
K9V 3Z9

London

Morning:

London Free Press
369 York St.
Box 2280
London, Ont.
N6A 4G1

Niagara Falls

Evening:

Review
4801 Valley Way
Niagara Falls, Ont.
L2E 6T6

North Bay

Evening:

North Bay Nugget
259 Worthington St.
Box 570
North Bay, Ont.
P1B 8J6

Orillia

Evening:

Packet and Times
31 Colborne St. E.
Orillia, Ont.
L3V 1T4

Oshawa

Evening:

The Oshawa Times
44 Richmond St. W.
Oshawa, Ont.
L1G 1C8

Ottawa

Evening:

The Citizen
1101 Baxter Rd.
Ottawa, Ont.
K2C 3M4

Evening:

Le Droit
375 Rideau St.
Ottawa, Ont.
K1N 5Y7

Owen Sound

Evening:

Sun-Times
Box 56
Owen Sound, Ont.
N4K 5P2

Pembroke

Evening:

Observer
186 Alexander St.
Pembroke, Ont.
K8A 4L9

Peterborough

Evening:

Examiner
400 Water St.
Peterborough, Ont.
K9J 6Z4

Port Hope

Evening:

Guide
Box 296
Port Hope, Ont.
L1A 3W4

St. Catharines

Evening:

Standard
17 Queen St.
St. Catherines, Ont.
L2R 5G5

St. Thomas

Evening:

Times-Journal
16 Hincks St.
St. Thomas, Ont.
N5P 3W6

Sarnia

Evening:

Observer
140 S. Front St.
Sarnia, Ont.
N7T 7M8

Sault Ste. Marie

Noon and Evening:

Star
Box 460
Sault Ste. Marie, Ont.
P6A 5M5

noon and evening

Simcoe

Evening:

Reformer
105 Donly Dr.
Simcoe, Ont.
N3Y 4L2

Sioux Lookout

Daily Bulletin
Box 668
Sioux Lookout, Ont.
P0V 2T0

Stratford

Evening:

The Beacon-Herald
108 Ontario St.
Stratford, Ont.
N5A 3H2

Sudbury

Evening:

Star
33 McKenzie St.
Sudbury, Ont.
P3C 4Y1

Thunder Bay

Morning: *Times-News*
Evening: *Chronicle-Journal*

Times-News/Chronicle-Journal
75 S. Cumberland St.
Thunder Bay, Ont.
P7B 1A3

Timmins

Evening:

Press
125 Cedar St. S.
Timmins, Ont.
P4N 2G9

Toronto

Morning:

The Globe and Mail
444 Front St. W.
Toronto, Ont.
M5V 2S9

Morning and Evening:
The Toronto Star

One Yonge St.
Toronto, Ont.
M5E 1E6

Morning:

The Toronto Sun
333 King St. E.
Toronto, Ont.
M5A 3X5

Welland

Evening:

Welland-Port Colborne Tribune
228 E. Main St.
Welland, Ont.
L3B 3W8

Windsor

Morning and Evening:

The Windsor Star
167 Ferry St.
Windsor, Ont.
N9A 4M5

Woodstock

Evening:

Woodstock-Ingersoll Sentinel Review
16 Brock St.
Woodstock, Ont.
N4S 8A5

PRINCE EDWARD ISLAND

Charlottetown

Morning: *Guardian*
Evening: *Patriot*

Guardian and Patriot
165 Prince St.
Charlottetown, PEI
C1A 4R7

Summerside

Evening:

Journal-Pioneer
4 Queen St.
Summerside, PEI
C1N 3N8

QUEBEC

Chicoutimi

Morning:

Le Quotidien
1051 Talbot Blvd.
Chicoutimi, PQ
G7H 4B5

Granby

Evening:

La Voix de L'Est
136 Main St.
Granby, PQ
J2G 2V4

Montreal

Morning:

Le Devoir
211 St. Sacrements St.
Montreal, PQ
H2Y 1X1

Morning:

The Gazette
1000 St. Antoine St.
Montreal, PQ
H3C 3R7

Morning:

Le Journal de Montreal
155 Port-Royal W.
Montreal, PQ
H3L 2B3

Evening:

La Presse
7 St. James St. W
Montreal, PQ
H2Y 1K9

Quebec

Morning:

Le Journal de Quebec
450 Bechard St.
Ville de Vanier, PQ
G1K 7P2

Evening:

Le Soleil
390 St. Vallier E.
Quebec, PQ
G1K 7J6

Sherbrooke

Evening:

Record
Box 1200
Sherbrooke, PQ
J1H 5L6

Morning:

La Tribune
1950 Roy St.
Sherbrooke, PQ
J1H 5L6

Trois-Rivieres

Morning:

Le Nouvelliste
500 St. Georges St.
Trois-Rivieres, PQ
G9A 5J6

SASKATCHEWAN

Moose Jaw

Evening:

Times-Herald
44 Fairford St. W.
Moose Jaw, Sask.
S6H 1V1

Prince Albert

Evening:

Herald
30-10th St. E.
Prince Albert, Sask.
S6V 5R9

Regina

Evening:

The Leader-Post
1964 Park St.
Regina, Sask.
S4P 3G4

Saskatoon

Evening:

Star-Phoenix
204-5th Ave. N.
Saskatoon, Sask.
S7K 2P1

NORTHWEST TERRITORIES

Fort Smith

Thursday

Slave River Journal
Box 990
Fort Smith, NWT
X0E 0P0

Frobisher Bay

Friday

Nunatsiaq News
Box 8
Frobisher Bay, NWT
X0A 0H0

Hay River

Wednesday

Tapwe
Box 130
Hay River, NWT

Wednesday:

The Hub
Box 1250
Hay River, NWT
X0E 0R0

Inuvik

Wednesday:

The Drum
Box 2600
Inuvik, NWT
X0E 0T0

Yellowknife

Friday

News of the North
Box 2820
Yellowknife, NWT
X0E 1H0

Twice Monthly:

Native Press
Box 1919
Yellowknife, NWT
X0E 1H0

Wednesday:

Yellowknifer
Box 2820
Yellowknife, NWT
X0E 1H0

YUKON

Whitehorse

Daily

Star
2149 2nd Ave.
Whitehorse, Yukon
Y1A 1C5

Every other Thursday

Yukon Indian News
22 Nisutlin Dr.
Whitehorse, Yukon
Y1A 3S5

Wednesday

Yukon News
211 Wood St.
Whitehorse, Yukon
Y1A 2E4

APPENDICES

APPENDIX A
INSTRUMENTS FOR SELF-EVALUATION

INTRODUCTION

The two instruments included in the appendix are designed to give you insight into your own teaching and learning styles. The explanation and rationale for instrument 1 should be read carefully. Instrument 2 is self-explanatory.

The S-C (Student-Content) Teaching Inventory is reprinted from: J. William Pfeiffer and John E. Jones, *The 1974 Annual Handbook for Group Facilitators*, San Diego, CA: University Associates, Inc., 1974. Used with permission.

INSTRUMENT ONE

S-C (STUDENT-CONTENT) TEACHING INVENTORY

Morris S. Spier

The "S-C Teaching Inventory" (SCTI) is an "armchair" instrument. There has been no standardization or investigation of its statistical properties. The inventory was not developed to classify behavior or to measure teacher effectiveness. It was not developed to define or monitor "successful" classroom methods or the "right" philosophy of education. It *is* a device designed to help respondents focus on, organize, and understand their own experiences in the teacher-student interaction.

DEVELOPMENT

First, several hundred statements reflecting the kinds of experiences that might be encountered in the real world of teaching were generated. Each statement was typed on a separate 3 x 5 card. Working independently, four of my colleagues and I sorted the statements into the following four categories.

Category I
Statements which reflect a teacher's willingness to share classroom authority and responsibility with students.

Category II
Statements which reflect a teacher's tendency to centralize classroom authority in his or her own hands.

Category III
Statements which reflect a teacher's concern for the content of the job, *i.e.*, the performance of task activities, including planning and scheduling course content and evaluating student progress.

Category IV
Statements which reflect a teacher's concern for the "role attributes" of the job, including having the respect of students and colleagues, being an expert, or modeling behavior for students to evaluate.

Statements falling into none of the above categories were discarded, and only those items placed in a particular category by all five judges were retained.

The second step involved pairing every statement in Category I above with every statement in Category II, and every statement in Category III with every statement in Category IV. Each resulting pair of statements was typed on a separate 3 x 5 card and sorted into two dimensions by the five judges. Again, only those statement-pairs which all five judges placed in the same dimension were retained. The two resulting dimensions were the following orientations.

Student Orientation (S)
These items allow a teacher to choose between attitudes and behaviors reflecting an emphasis on sharing vs. an emphasis on personally retaining classroom authority.

Content Orientation (C)
These items allow a teacher to choose between attitudes and behaviors reflecting emphasis on job activities vs. emphasis on role attributes.

In its present form, the SCTI contains forty items (*i.e.*, pairs of statements) measuring the dimensions outlines above. Twenty items drawn from the Category I & II statement-pairs comprise the student-orientation (S) scale, and twenty items drawn from the Category III & IV statement-pairs make up the content-orientation (C) scale.

ADMINISTRATION

A nonthreatening climate is important. This is not a "test." There are no "right" or "wrong" answers. The instrument will simply help to make some of the issues covered in this introduction more meaningful and useful.

It is helpful if the facilitator reads the instructions aloud while the participants read them silently to themselves. He should emphasize particularly:

- the repetitiveness of some of the items, noting that this is not an attempt to measure the participant's response consistency;
- that it may sometimes be difficult to choose the "most important" statement of two equally attractive alternatives, but the participant must choose one or the other;
- that participants may find some items in which they feel both alternatives are unattractive, but they should still choose the "most important," *i.e.*, the statement that they feel is least unattractive; and
- that participants should not spend too much time on any single item, since first impressions may be best.

If some participants complete the instrument sooner than others, they should sit quietly until all persons are finished. Most persons complete the inventory in about 15 to 20 minutes.

THEORY INPUT

The way a teacher runs his or her classroom does not "just happen." Instead, a teacher's behavior is determined by his or her *beliefs* about the real world. One set of beliefs centers on aspects of the "psychological contract" between teachers and students. The other set of beliefs centers on aspects of the "psychological contract" between teachers and the educational system.[1]

Basic Assumptions

First, what a teacher does in the classroom reflects some basic assumptions and beliefs about students and learning. Every teacher's behavior reflects his or her personal answer (voiced or unvoiced) to the question "Do you really believe that people want to learn and are capable of taking responsibility for their own learning, or that they need to be coerced or seduced into receiving an education?" Thus, a teacher who gives frequent "pop quizzes," reviews students' notebooks to be sure they are taking notes, and checks off homework assignments reflects certain beliefs about students' attitudes toward learning — as does a teacher who is friendly and easygoing in his approach.

Second, a teacher's behavior also reflects voiced or unvoiced answers to questions about a teacher's role in the learning process. Teachers who emphasize planning and organizing course content, meeting with students, and designing new approaches to class material reflect certain beliefs about the expectations of their administrators and the educational system. So do other teachers who emphasize personal expertise, respect, and setting an example for students.

In the SCTI, a teacher's assumptions and beliefs about students' attitudes toward learning and how a teacher should respond to students' needs are measured by the S scale. A teacher's assumptions and beliefs about his or her role in the classroom are measured by the C scale.

Both orientations, of course, exist simultaneously in the behavior of every teacher. A teacher can be highly student oriented and highly content oriented at the same time. It is a teacher's philosophy that determines the emphasis he places on each orientation. Some teachers, who feel that the needs of students and of the system are mutually exclusive and inevitably in conflict, strive to resolve the conflict by concentrating on one or the other set of needs. Other teachers, while also feeling that a conflict between incompatible needs is inevitable, work toward some compromise or balance in which neither orientation is fully emphasized. Still other teachers see the student orientation and content orientation as functionally related. They aim to *integrate* student and system needs by emphasizing both.

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[1] Research has shown two similar dimensions to be important in determining leadership behavior in organizations. Blake and Monton (1964) built a model to understand leadership styles in organizations (the Managerial Grid) and named the dimensions "concern for people" and "concern for production." The former stresses a manager's concern for the needs of the people who work for the organization. The latter stresses his concern for the needs of the organization.

FIVE TEACHING STRATEGIES

Five "pure" teaching strategies (or styles) result from (1) the interaction of the student and content orientations, and (2) the differing degrees of emphasis which teachers place on each orientation. The five styles are discussed below and are visually depicted in Figure 1, "Models of Teaching Strategies" (adapted from Blake & Mouton, 1964).

Strategy 1

The strategy at the lower right-hand corner of the diagram defines the style of a teacher whose basic philosophy dictates that student and system needs are mutually exclusive. Thus, this teacher resolves the conflict by placing maximum emphasis on content orientation, and minimum emphasis on student orientation.

For this teacher, the syllabus defines what should be taught; the length of the term governs the time available. Since students naturally resist school and learning, a teacher's primary responsibility is to make sure the material *gets taught*. It is important to set definite standards of classroom performance and to check continually to see that students are meeting the standards. This is accomplished by giving frequent "pop" quizzes, taking attendance at all classes, constructing some test questions from minute points contained in footnotes in the text, and so on.

Strategy 2

This teacher, whose strategy appears at the upper left-hand corner of the diagram, also feels that student and system needs are incompatible and in conflict. Like his Strategy 1 colleague, he feels that students really do resist school and learning. But he disagrees that the basic need-conflict can be overcome by tight classroom control. Instead, this teacher places maximum emphasis on student orientation, and minimum emphasis on content orientation.

Students will be taught by teachers they like — so being liked is both practical and personally gratifying for this teacher. He feels that a teacher's primary responsibility is to be supportive and to win the friendship of his students. This is accomplished by putting on a "good show" in the classroom, ignoring attendance, allowing students to set their own course grades, inviting students to his house, and so on.

Strategy 3

Like his Strategy 1 and 2 colleagues, the teacher whose strategy is defined in the lower left-hand corner of the diagram also believes in the conflict of student and system needs and in students' natural resistance to learning. But, unlike his colleagues, he feels helpless to deal with the situation.

Students will learn what they want to learn, when they want to learn it. A teacher simply cannot change this fact. Thus, his primary responsibility is to present the information and to do what his job description requires. If a teacher gets a "good class," he is lucky; if he gets a "bad class," there is nothing he can do about it. Those students with initiative will learn. For this teacher, his philosophy justifies his dull, mechanical presentations. At the university level he may prefer to teach "advanced seminars" and shun the basic core courses.

Strategy 4

At the middle of the diagram is the strategy of another teacher who believes in the basic incompatibility of student and system needs. But he aims for a compromise, or balance, by fully emphasizing neither the student orientation nor the content orientation.

Both system needs and student needs matter, but this teacher cannot see how to put them together. He ends up with a moderate level of concern for each. Thus, the system requires the teacher to give examinations, but he may specify the exact pages in the text from which questions will be drawn. Similarly, since he is required to give grades, he may "grade on a curve," allow students to omit one or more test scores in computing final grades, give extra points for class attendance, or allow students to write an "extra" paper or book review to improve their grades.

Strategy 5

At the upper right-hand corner of the diagram is the strategy of a teacher who believes that students are always learning. In his mind, student and system needs are not *inevitably* in conflict. He aims to *integrate* both sets of needs by placing maximum emphasis on both student and content orientations.

This teacher feels that a teacher's primary responsibility is not to see that something is *taught,* but rather to see that something is *learned.* Thus, it is important to create a climate in which learning is involving, meaningful, and relevant. Learning activities are structured to bring maximum benefit to the student, the teacher, and the school system.

The preceding descriptions are clearly caricatures of teacher behavior; they are not intended to be descriptions of real people. Certainly there are as many different classroom strategies as there are teachers. The strategy descriptions exaggerate behaviors that differentiate types of teachers not to simplify behavior, but to make it more understandable. If the strategies are defined, they can be changed. The "S-C Teaching Inventory" is a way of opening this process by providing a vocabulary, a model, and some self-involving experiences to focus on one's own behavior.

REFERENCE

Blake, R., & Mouton, J.S. *The managerial grid.* Houston: Gulf Gulf Publishing, 1964.

S-C TEACHING INVENTORY
SUMMARY SHEET

Name ______________________________ Date ________________

S	
C	

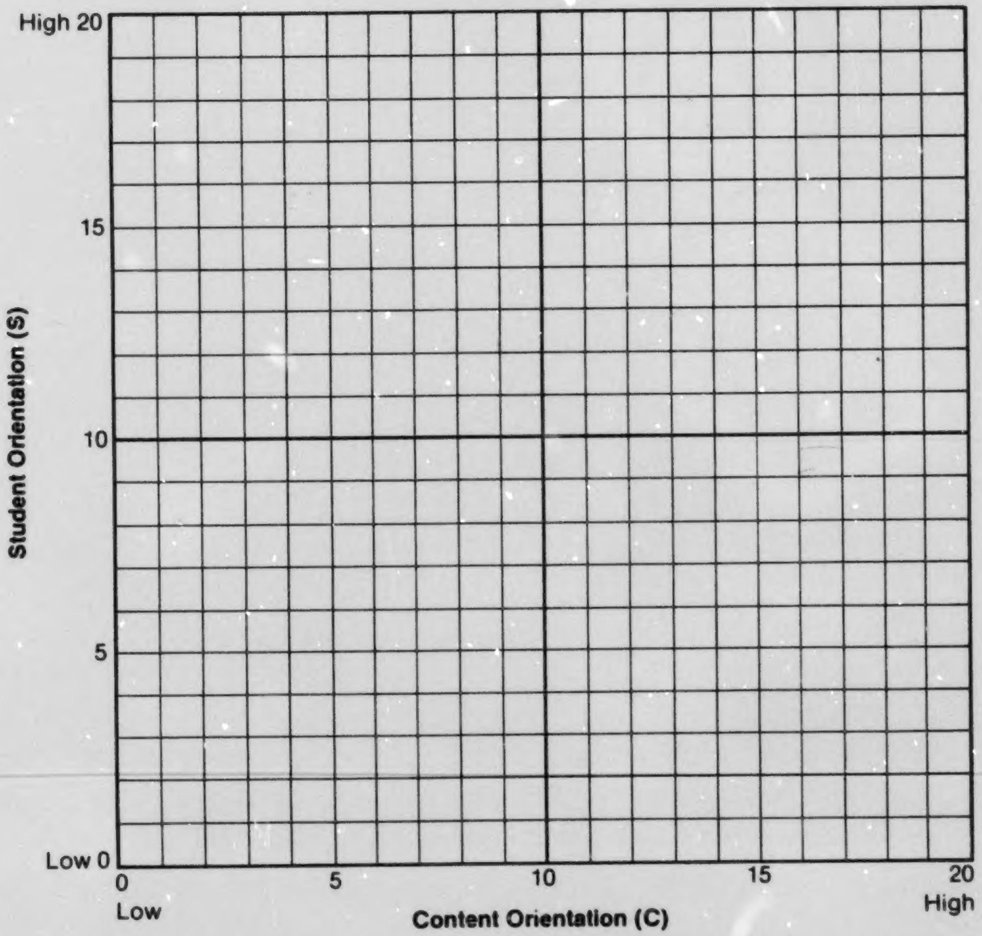
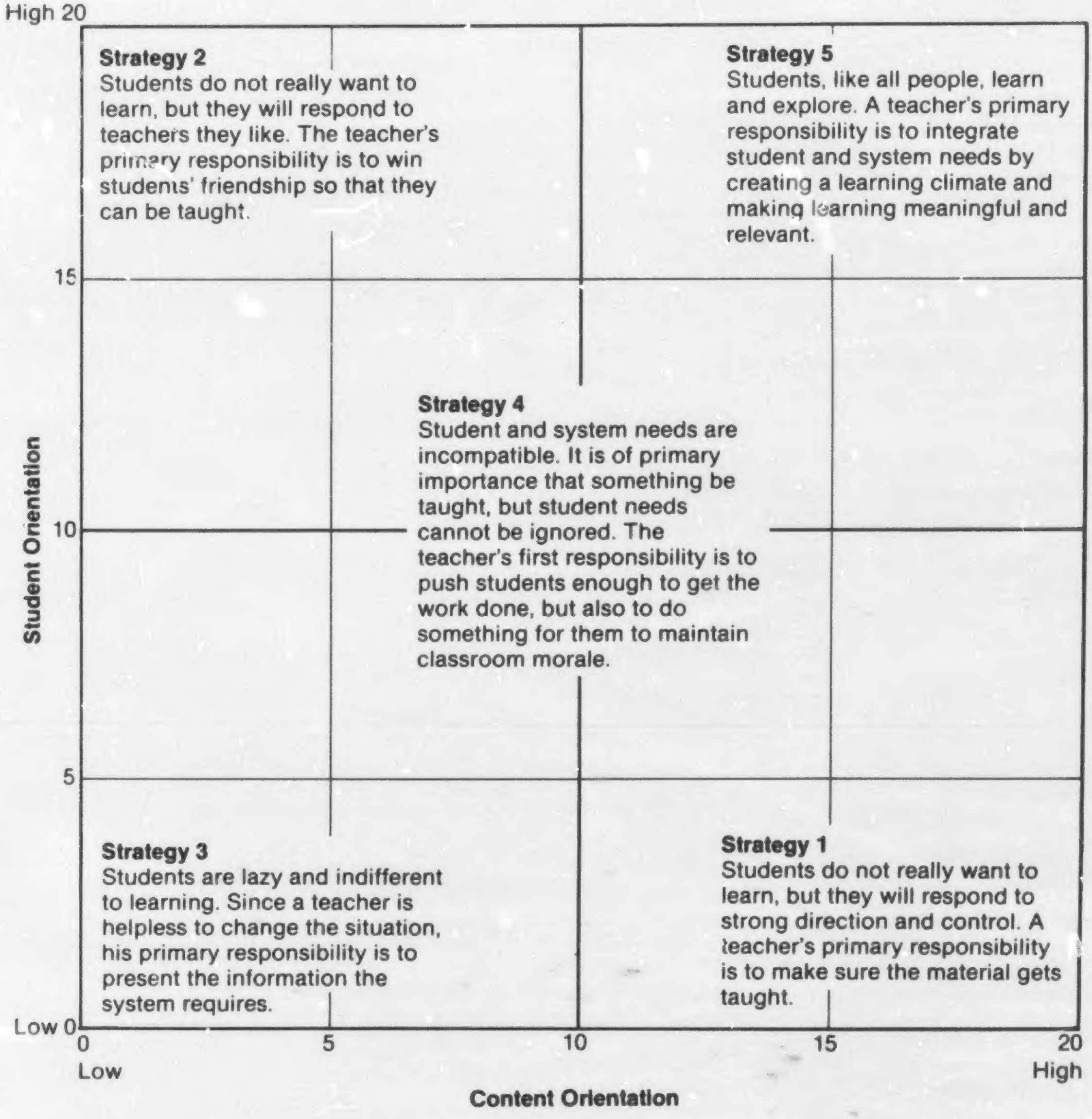


Figure 1. Models of Teaching Strategies



Strategy 2
Students do not really want to learn, but they will respond to teachers they like. The teacher's primary responsibility is to win students' friendship so that they can be taught.

Strategy 5
Students, like all people, learn and explore. A teacher's primary responsibility is to integrate student and system needs by creating a learning climate and making learning meaningful and relevant.

Strategy 4
Student and system needs are incompatible. It is of primary importance that something be taught, but student needs cannot be ignored. The teacher's first responsibility is to push students enough to get the work done, but also to do something for them to maintain classroom morale.

Strategy 3
Students are lazy and indifferent to learning. Since a teacher is helpless to change the situation, his primary responsibility is to present the information the system requires.

Strategy 1
Students do not really want to learn, but they will respond to strong direction and control. A teacher's primary responsibility is to make sure the material gets taught.

S-C TEACHING INVENTORY

Morris S. Spier

The following inventory concerns your feelings about some teaching practices. Its purpose is to provide you with meaningful information about yourself as a teacher.

There are no right or wrong answers. The best answer is the one most descriptive of your feelings and opinions. Therefore, answer honestly, because only realistic answers will provide you with useful information.

Each of the forty items consists of two statements, either about what a teacher can do or ways he can act. Circle the letter (A or B) in front of the statement that *you* think is the more important way of a teacher to act. In the case of some items you may think that both alternatives are important, but you still should choose the statement you feel is *more* important. Sometimes you may think that both alternatives are unimportant; still you should choose the statement you think is *more* important.

It is more important for a teacher:

1. (A) To organize his course around the needs and skills of every type of student.
   (B) To maintain definite standards of classroom performance.
2. (A) To let students have a say in course content and objectives.
   (B) To set definite standards of classroom performance.
3. (A) To emphasize completion of the term's course syllabus.
   (B) To let students help set course goals and content.
4. (A) To give examinations to evaluate student progress.
   (B) To allow students a voice in setting course objectives and content.
5. (A) To reward good students.
   (B) To allow students to evaluate the performance of their instructor.
6. (A) To allow students to make their own mistakes and to learn by experience.
   (B) To work to cover the term's subject matter adequately.
7. (A) To make it clear that he is the authority in the classroom.
   (B) To allow students to make their own mistakes and to learn by experience.
8. (A) To be available to confer with students on an "as needed" basis.
   (B) To have scheduled office hours.
9. (A) To give examinations to evaluate student progress.
   (B) To tailor the course content to the needs and skills of each class.
10. (A) To draw a line between himself and the students.
    (B) To let students plan their own course of study according to their interests.
11. (A) To take an interest in the student as a person
    (B) To make it clear that the teacher is the authority in the classroom.
12. (A) To draw a line between himself and the students.
    (B) To be available for conferences with students on an "as needed" basis.
13. (A) To modify his position if one of his students shows him where he was wrong.
    (B) To maintain definite standards of classroom performance.
14. (A) To allow students to have a say in evaluating teacher performance.
    (B) To draw a line between himself and the students.
15. (A) To see that the class covers the prescribed subject matter for the course.
    (B) To be concerned about the student as a person
16 (A) To let students learn by experience.
   (B) To maintain definite standards of classroom performance.
17. (A) To allow students a voice in setting course objectives and content.
    (B) To make it clear that he is the authority in the classroom.

18. (A) To discourage talking among students during class time.
(B) To establish an informal classroom atmosphere.

19. (A) To allow student evaluation of faculty.
(B) To make it clear that the teacher is the authority in the classroom.

20. (A) To draw a line between himself and the students.
(B) To let students make mistakes and learn by experience.

21. (A) To be an authority on the class materials covered.
(B) To keep up to date in the field.

22. (A) To be respected as a person of high technical skill in the field.
(B) To up-date class and lecture materials constantly.

23. (A) To attend to his own professional growth.
(B) To be an authority on the class materials covered.

24. (A) To attend to his own professional growth.
(B) To set an example for his students.

25. (A) To see that each student is working at his full capacity.
(B) To plan, in considerable detail, all class activities.

26. (A) To construct fair and comprehensive examinations.
(B) To set an example for his students.

27. (A) To be known as an effective teacher.
(B) To see that each student is working at his full capacity.

28. (A) To construct fair and comprehensive examinations.
(B) To see that each student is working at his full capacity.

29. (A) To be an authority on the class materials covered.
(B) To plan and organize his coursework carefully.

30. (A) To be a model for his students to emulate.
(B) To try out new ideas and approaches on the class.

31. (A) To see that each student is working at his full capacity.
(B) To plan and organize course content carefully.

32. (A) To have scheduled office hours to meet with students.
(B) To be an expert on the course subject matter.

33. (A) To set an example for his students.
(B) To try out new ideas and approaches on the class.

34. (A) To teach basic courses as well as more advanced courses.
(B) To be a model for his students to emulate.

35. (A) To plan and organize the class activities carefully
(B) To be interested in and concerned with student understanding.

36. (A) To be an authority on the course content.
(B) To be known as an effective teacher.

37. (A) To give examinations to evaluate student progress.
(B) To be an authority on the class materials covered.

38. (A) To attend professional meetings.
(B) To be respected as a person of high technical skill in the field.

39. (A) To be respected for his knowledge of the course subject matter.
(B) To try out new ideas and approaches on the class.

40. (A) To be an authority on the course content.
(B) To construct fair and comprehensive examinations.

S-C TEACHING INVENTORY SCORING SHEET

The instrument may be self-scored directly on the questionnaire or it may be scored using a template. To score directly on the questionnaire the following steps should be used.

1. Participants are asked to draw a line across the page under item 20.
2. Items 1 to 20 comprise the S scale. The following "answers" are read to the group, calling out first the item number, then the response. The participants should place an "X" next to each item for which they have chosen the response indicated below.

Item	**Response**	**Item**	**Response**	**Item**	**Response**
1	A	8	A	15	B
2	A	9	B	16	A
3	B	10	B	17	A
4	B	11	A	18	B
5	B	12	B	19	A
6	A	13	A	20	B
7	B	14	A		

3. Items 21 to 40, which comprise the C scale, are scored as in Step 2 above. The "answers" follow.

Item	**Response**	**Item**	**Response**	**Item**	**Response**
21	B	28	A	35	A
22	B	29	B	36	B
23	A	30	B	37	A
24	A	31	B	38	A
25	B	32	A	39	B
26	A	33	B	40	B
27	A	34	A		

4. The number of X's score for items 1 through 20 are counted. This number should be written in the top square of the box (next to the *S*) on the Summary Sheet.
5. The number of X's scored for items 21 through 40 are counted and written in the bottom square of the box (next to the *C*) on the Summary Sheet.
6. Next, both *S* and *C* scores should be plotted on the chart on the Summary Sheet. The score in the *S* box should be plotted on the left side (vertical scale) of the chart. The score in the *C* box should be plotted on the bottom (horizontal scale) of the chart. The participants make a mark on the chart where their *S* and *C* scores intersect.

If preferred, a scoring template can be made by taking another sheet and punching out holes for the appropriate responses as indicated above. Then the number of X's showing for items 1 through 20 and the number showing for items 21 through 40 are counted. Steps 4 through 6 follow as above.

Since the statistical properties of the inventory are presently being studied, the author would greatly appreciate receiving scores obtained from the use of the instrument and especially, if possible, the actual questionnaires. They should be sent to the address listed in the Contributors section of this *Annual*.

INTERPRETATION OF SCORING

With a score of 20 denoting a "high" or maximal concern and a score of 0 denoting a "low" or minimal concern, *teaching philosophies* may be interpreted in terms of the degree of emphasis placed on each of the respective orientations.

A high score on the *S* scale of the SCTI means that the participant agrees that students should have a voice in planning, organizing, implementing, and evaluating classroom activities. A low score on this scale means that the participant rejects student involvement in these activities and feels that classroom authority should be centered in the hands of the teacher.

A high score on the *C* scale means that the participant stresses the performance of the task activities of the teaching job, including the planning and organizing of course content and the evaluation of student progress. In contrast, a low score on this scale means that the participant stresses the role attributes of the teacher's job, including being an expert, being respected, and setting an example for students to emulate.

Similarly, teaching styles may be interpreted in terms of the interaction of the *S* and *C* scales, that is, in terms of the degree of student orientation vs. content orientation which a given teacher exhibits. The intersect of the *S* and *C* scores, when plotted on the graph provided on the Summary Sheet, will place every participant somewhere on the chart. For example, an *S-C* intersect falling in the lower right-hand quadrant is indicative, as discussed above, of a Strategy 1 teaching style.

Finally, participants may review their responses to the specific items which resulted in their particular *S*- and *C*-scores. Discussion can then be generated about the specific teaching *behaviors* defined by the individual items. When participants are asked to go back over the questionnaire noting items which caused them particular difficulty or about which they have particularly strong feelings, some lively small-group discussion is likely to result.

INSTRUMENT TWO

YOUR CLASSROOM MANAGEMENT

Place a check mark in the appropriate column. Discuss the results with a trusted colleague.

		NEVER	SOMETIMES	OFTEN	ALWAYS
STUDENT INVOLVEMENT	How often does the student make his/her own decisions concerning:				
	(a) topics of study				
	(b) data sources				
	(c) methods of data organization				
	(d) ways of presenting the answer?				
	How often is student feedback sought concerning classroom procedures?				
PROCESS MONITORING	How often is each of the following methods used in order to make the student aware of the learning process (Appendix B):				
	(a) process-oriented questions				
	(b) checklists				
	(c) observers				
	(d) process evaluation?				
EVALUATION	How often does the student accept responsibility for meeting the educational goals of the classroom?				
	How often does the student evaluate his/her own classroom performance?				
	How often is the evaluation method discussed before an exercise is begun?				
	How often is a student's marks discussed with the student?				
COMMUNICATION	How often does a student make honest candid comments concerning classroom procedures?				
	How often does a student make a serious suggestion relating to classroom planning?				
	How often are allowances made for the individual needs of students?				

APPENDIX B
THE PROCESS-ORIENTED CLASSROOM

THE PROCESS — ORIENTED CLASSROOM

THE DIFFERENCE BETWEEN A PRODUCT-ORIENTED AND A PROCESS-ORIENTED CLASSROOM

In any well designed exercise or assignment, the student is involved in some kind of learning process. The resulting product created by the student is simply a concrete expression of this process. For example, this resource book is a product. However, to produce this document, the authors were actively involved in a lengthy process.

Since a product is the result of a process, it may seem that the two terms are inseparable. On the other hand, the degree to which each is valued in the classroom leads to quite distinct approaches to teaching and learning (see Figure 3). It is also useful at this stage to clear up several misconceptions concerning the nature of a process-oriented classroom:

- attention to process does not negate the importance of content; however, the content, instead of being an end in itself is the vehicle through which the process is worked.
- process does **not** negate product; concern for process adds an additional dimension to the worth of a product
- an activity-centred classroom is not necessarily a process-oriented classroom, i.e., the students may be "doing" but be neither aware that they are going through a process nor understand what the process is

FIGURE 3

THE PRODUCT-ORIENTED CLASSROOM	THE PROCESS-ORIENTED CLASSROOM
the teacher emphasizes, "*what* did you do?"	the teacher also emphasizes, "*how* did you do it?"
tasks revolve around items of content	tasks involve a process of learning
the answer is most important	the means of obtaining an answer is equally as important as the answer
the teacher believes that there is a body of content that the student must cover	the teacher recognizes that content is only one component of the learning process
the teacher evaluates the product	the teacher also evaluates the process
the student "does"	the student "does" **and** thinks about what he/she did
the student often lacks an awareness of how he/she learns	the student has a growing awareness of how he/she learns and can learn
learning takes place through the acquisition of factual knowledge	learning occurs when the student works through a process in which knowledge is actively manipulated and restructured to reach an insight
problem-solving skills may develop when learning the content	problem-solving skills develop when learning the content **and** when the student reflects on the process used to work through the content

STRATEGIES FOR INTRODUCING, MONITORING AND EVALUATING PROCESS

There are a number of different strategies which are useful in introducing, monitoring and evaluating process. The following are intended as "food for thought":

- asking process-oriented questions, e.g.,
  - — How was the data collected?
  - — What sources of data did you use?
  - — How did you organize the data?
  - — How did you analyse the data?
  - — In what ways did other students in the classroom do the assignment differently?
  - — How could you have done the assignment differently?
  - — What was the most difficult part of the assignment for you?
  - — How was this assignment similar to the assignment you did last week?
  - — etc.

- using a checklist, i.e.,
  have students check off each step in the process as it is completed (data sources identified, data collected, data organized, etc.)

- evaluating specific steps in the process, e.g.,
  assign marks for the successful completion of each step:

	low		....		high
Identification of Data Sources	1	2	3	4	5
Data Collection	1	2	3	4	5
Data Organization	1	2	3	4	5
Data Analysis	1	2	3	4	5

- using an "observer", i.e.,
  if students are working in groups, tape or video tape the proceedings and have the students analyse the process OR have the teacher/student(s) record the process and report on his/her observations

- having the student keep a self-appraisal diary or daily log in which he/she records a summary of "what" he/she learned and "how" it was learned

- using charts/diagrams to reinforce the steps in the process, e.g.,
  have the student complete the procedural model (Figure 2) used in this document; keep the diagram on the board or elsewhere in the classroom

- assessing the understanding of process by using different content

FOR CONSIDERATION

- the student in a general level classroom responds well to process evaluation; the realization that he/she is capable goes far in improving a feeling of self-confidence and self-worth
- attention to process can help the student to begin building bridges between subjects AND help the student to make connections between the world of school and that which exists outside
- process rather than content can provide the underlying framework for any course of study
- developing an awareness and appreciation of reflective thought is a step towards fostering the attitude that learning is continuous; since the students of today are really the first generation who will need to undergo continual job retraining, it is even more important that they understand that learning is a continuous process

APPENDIX C
THE STUDENT-STRUCTURED CLASSROOM

THE STUDENT-STRUCTURED CLASSROOM

The idea of a student-structured classroom, a classroom in which students have the freedom to make decisions which affect their learning, may appear, at first, threatening to many teachers. It is important to remember that student structure does not mean chaos or loss of classroom control. Student structure refers to a situation in which students are given the freedom at each stage in the process to make decisions about how their learning proceeds. In this type of classroom, students become more involved, more motivated, more interested. Learning become less abstract and more real. Students gain self-confidence as they realize they have decision-making and problem-solving abilities. Self-worth increases.

From the teacher's standpoint, a student-structured classroom is often less stressful than a teacher-structured classroom. We are not attempting to have all students fit into the same learning style. Flexibility is allowed to meet individual student needs. The teacher becomes less of an authority figure, who controls and directs and more of a resource person, who helps and facilitates. More personal contact with students can be achieved.

STRATEGIES FOR MOVING TOWARDS A MORE STUDENT-STRUCTURED CLASSROOM

In Figure 4 strategies for moving towards a more student-structured classroom are illustrated by three successive rings. The number of rings is, of course, arbitrary. Any movement outwards from the centre involves a move towards a more student-structured situation. As noted earlier, this movement represents a progression and requires the development of skills and self-confidence on the part of the student. Although Hunt[1] has pointed out that the majority of grade nine students need a less teacher-structured classroom than they have previously experienced, Ross and Maynes[2] note that these same students lack the skills to operate in the second or third rings. We must therefore teach students the skills and encourage them to become more self-reliant. As much as possible, we should allow students to move outwards at their own rate. Initially, for the general level student, the easiest areas in which to allow student decisions are the areas of data identification and presentation. To have students formulate their own triggers and independently analyse their data may be longer-term goals.

A student-structured classroom is one in which:

- there is a variety of resources available for use
- students are given the freedom to make mistakes and learn from their mistakes
- creativity and original thinking are encouraged
- content objectives may be flexible
- the teacher and other students are perceived as resources and participants in each other's learning
- there is flexibility in presentation by the student

> ". . . It is in fact nothing short of a miracle that the modern methods of instruction have not yet entirely strangled the holy curiosity of inquiry: for this delicate little plant, aside from stimulation, stands mainly in need of freedom; without this, it goes to wrack and ruin without fail." . . . Albert Einstein.

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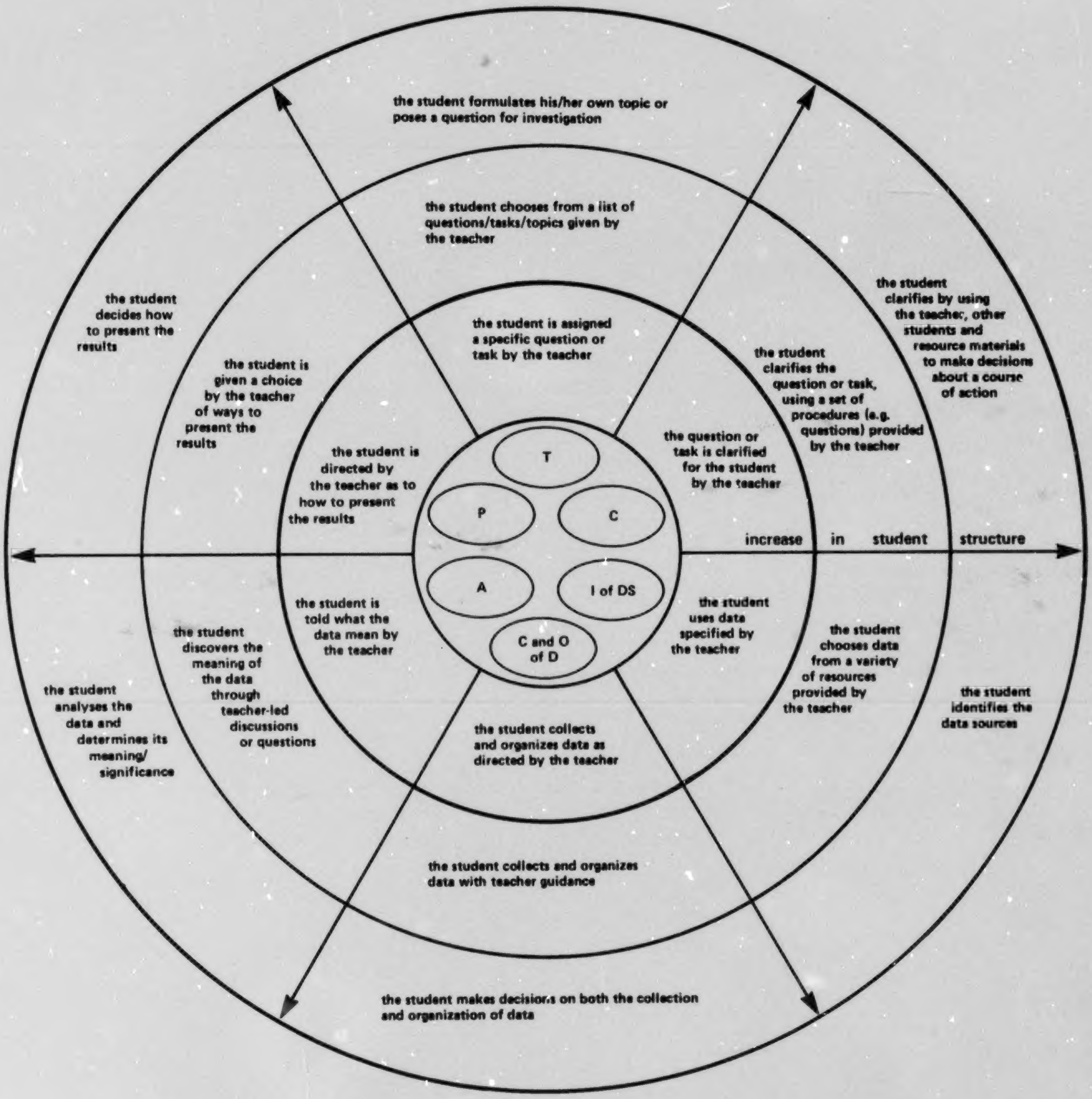
[1] Hunt, D.E. "Conceptual Level Theory and Research as Guides to Education Practice." *Interchange*, 1978. *8* (4), 78-90

[2] Ross, J.A., and Maynes, F. *Geographic Thinking Skills*. OISE Press, Informal Series /40, 1981.

Figure 4

The Teacher Structured/Student Structured Classroom


the student formulates his/her own topic or poses a question for investigation
the student chooses from a list of questions/tasks/topics given by the teacher
the student is assigned a specific question or task by the teacher
the student clarifies by using the teacher, other students and resource materials to make decisions about a course of action
the student clarifies the question or task, using a set of procedures (e.g. questions) provided by the teacher
the question or task is clarified for the student by the teacher
the student decides how to present the results
the student is given a choice by the teacher of ways to present the results
the student is directed by the teacher as to how to present the results
T
P
C
A
I of DS
C and O of D
increase in student structure
the student is told what the data mean by the teacher
the student discovers the meaning of the data through teacher-led discussions or questions
the student analyses the data and determines its meaning/ significance
the student uses data specified by the teacher
the student chooses data from a variety of resources provided by the teacher
the student identifies the data sources
the student collects and organizes data as directed by the teacher
the student collects and organizes data with teacher guidance
the student makes decisions on both the collection and organization of data

APPENDIX D

COMPUTER TECHNOLOGY AND THE CURRICULUM

COMPUTER TECHNOLOGY AND THE CURRICULUM

Jo Ann Wilton

Computer technology is possibly the most powerful tool ever available to education. Certainly it has no rival since the printing press. But, like the printing press, the new technology is only as good as the material it produces for the learner and the use to which that material is put. Computers are here to stay in education and their range and number of applications will only increase.

Computers are not an end in themselves but are instead a vehicle, a tool to be employed in the most appropriate or most efficient way by the users. We, the teachers, and through us the students, are the users. We do have a lot to say about when and how the power of the computer will be integrated into our school system, either as a tool of learning, or in some instances, as a course objective in itself.

To date, software to support objectives in geography is small in quantity and relatively narrow in scope. Instead of letting this fact turn us away, we should seize the opportunity to participate in determining which types of software are most appropriate. The creativity and resourcefulness of geography teachers is bound to produce ideas for materials that will augment our lesson objectives and provide greater challenge and satisfaction for our students.

The underlying premise of this document is that we have tended to focus our instructional design for general level courses on a particular type of learning strategy. Through the structure outlined in this document we are challenged to expand our current perception of strategies appropriate for the general level student. Working with this expanded framework we also can be enticed into going beyond the traditional types of uses of computers.

The numbers in the discussion which follows refer to the lists of available software which appear at the end of this appendix.

The application of computers to geographical studies falls into three categories:

i) technological aspects of the geography content
ii) computer-enhanced learning
iii) computer-supported learning

i) In the first instance, computers will become the indirect subject of study in those areas where computer technology has changed the traditional way things have been done. A specific example is transportation and communication. The dynamics of the flow of information and goods through these networks already have changed significantly and are constantly undergoing further adjustments. Information technology is now a major issue for the developing world. This is only one of many examples which could be given. Have we adapted our course content accordingly?

ii) Computers can be used to enhance or extend existing course objectives. Geography teachers always have worked hard to bring students into contact with the environment, to let them see and understand the many factors interacting in any real world decision, and to let the students as far as possible see themselves as actors in that environment.

Computerized simulations can add excitement and personal involvement to many topics and can offer opportunities to carry the unit objectives beyond mere data manipulation to more realistic analysis and explanation. This area of simulated physical processes or human decision-making activities may be the greatest single benefit of the introduction of computers to geography.

When sufficient software is developed, students who need extra instruction or practice on specific skills or concepts will be able to work with tutorial or drill and practice packages. Although this is a somewhat mundane use of computer power, it is, nevertheless, an individualizing methodology with payoffs for both learner and teacher. (1)

iii) Computer materials can also play a role in the support of existing learning activities. The practical aspects of geography courses will benefit greatly from computer support for data analysis, data presentation, data base searches and control of lab equipment. Used in this way the computer becomes a powerful 'tool' of learning.

Each step in the process outlined in this document will gain from aspects of computer assistance. A walkthrough of the steps will illustrate the variety of roles that computers can play.

TRIGGER:

There is no doubt about the attraction of computer 'games', particularly for a portion of society. This fascination for the purely entertainment games of the arcade can be used in building educational games to create interest and individual involvement in a topic. In this educational sense, 'game' refers to the elements of task orientation, competition and some measure of control by the player. The graphics and speed characteristics that contribute so much to arcade games should also be incorporated in educational materials as long as they add to, not divert from, the learning experience.

For example, a simulated competition among companies could be used as a TRIGGER to stimulate investigation into the factors affecting industrial survival. (2)

CLARIFICATION:

The same simulation which provides the trigger may also clarify the major question and identify the direction of study. By having the chance to alter the controlling variables in a given situation, students will learn which factors appear to have the greatest influence.

Data base searches also could provide a source of clarification. A class project to search the Globe and Mail through INFO GLOBE (3) may turn up articles which would be useful to focus the background for a topic which has already gained some interest.

DATA IDENTIFICATION:

Perhaps for some time to come, paper storage sources will be dominant in schools; but, subject areas such as geography should make it their responsibility to expose students to data base search techniques. Students in general level courses need these opportunities as much as any other and their geography data identification should include both menu driven (3) and keyword electronic data bases.

Society is becoming dependent on computer-based storage of information and all students must have the opportunity to learn how to access data bases, retreive information, and perhaps most importantly, how to question what they find.

DATA COLLECTION AND ORGANIZATION:

This is one of the tasks for which the computer is best suited. Over the next few years computer access will increase for all subject areas including geography and students will have computers as learning tools for several activities including the following:

- more data base strategies
- accumulation of student-gathered questionnaire data (4)
- graphing of data to look for patterns (5)
- crunching of numbers to show the trends (6)
- accumulation of information into a student built data file (7)
- development of classification systems for information found (7)

ANALYSIS OF DATA:

In the past, so much time had to be spent working with the geographical data before they could be analyzed that many courses ended up concentrating on how to do geography rather than the doing of geography. A computer can shorten the processing of data and give us more time to focus on analysis and explanation. Once again, there are a number of roles that computers will play:

- simulation of physical processes hard to isolate or control in the natural environment (8),
- simulation of human activities and decision-making where students will be able to test their hypotheses by varying control factors (9),
- results of data collection and organization can be tested either in simulations or by more general analysis techniques. In the near future it will be possible for students to use computers to build their own simulations of a particular environment (10).

PRESENTATION:

Many students in general level programs are dissatisfied with the work that they submit. Word processing capability would be a definite asset in these cases as well as an important tool for all students. (11) Rough drafts can be reworked for structure, content, grammar and spelling so that the final product looks professional and is something that the student can take pride in. Graphing and mapping software that is now becoming available will aid in the analysis and in the presentation of materials for class projects. (5)

The integration of computers to a geography classroom should not begin when a piece of software is found. At the time that course and unit objectives are set, consideration should be given to the role that the computer might play. If appropriate software is already available, it can be used immediately. If programs are not yet available that would meet the objectives as they have been stated, then it may be necessary to arrange to have the programs written.

Only if software is asked for is it likely to be developed. When teachers know what they want, commercial software companies, Boards of Education, the Ministry, etc. will all be possible sources. Some of the programs suggested here are already available — others are just ideas to be picked up by those who have the expertise and the time to work them out.

GEOGRAPHY SOFTWARE FOR GENERAL COURSES — A STARTER'S LIST

The software listed here has been identified as appropriate for general level intermediate learners. There are no doubt many other high quality programs currently in use in many geography classrooms; but, the lack of a central clearing house or a published software catalogue makes a comprehensive list difficult.

As far as possible, the most frequently used educational computers have been referenced, however, this document is too early to include software for any Canadian educational microcomputers.

(1) Drill and practice programs are fairly easy to find and even if the topic is not quite right, most of them are easy to change to a more relevant content or skill. Most of these programs are of limited quality but the ones suggested below have been used with success in some areas.

a) Topographic Symbols — Public domain — PET — M. Tubbs, Guelph Collegiate

b) Mediterranean Tour — Public domain — PET — W. Squirrel, Erin District H.S.

c) Mapping Skills — Public Domain — PET — M. Tubbs, Guelph Collegiate

Mapping Skills — a three part program reviewing intermediate skills

d) Eurasian Caps — Public domain — PET — M. Tubb, Guelph Collegiate

e) Climates — Public domain — PET — D. Cloute, Centennial Collegiate, Guelph

f) Time Zones — Public domain — PET — D. Cloute, Centennial Collegiate, Guelph

g) Crossword — Public Domain — PET — Don Revell, Lincoln County Board of Education.

h) Word Search — Public Domain — PET — Ontario Software Catalogue

(2) Decision-making simulations

a) At a very basic level, the game Lemonade, available on almost all types of computers, is a good starter. However, there are endless possibilities for good locational analysis problems.

b) Geography simulations
There are many simulations around and some would be of use as TRIGGERS. There is a set of programs from the *Computers in the Curriculum Project: Geography* from England. The set includes Farm Game, Windmill Game, Joint Stock Companies Trading Game. (available on PET and Apple £25: Geoff Gallagher, Longman Micro Software, 33-35 Tanner Row, York Y01 1JP).

(3) Data Base Use

a) INFO GLOBE

INFO GLOBE is a data base which contains all newspaper articles from the Globe and Mail since November 1977. Those articles can be accessed by key word search from any computer with a modem. There is an on-line charge based on the connect time — a special price for educational institutions. INFO GLOBE is advertised regularly in the newspaper and is also listed in the telephone book.

There are other data bases available to schools for everything from the stock market to foreign newspaper excerpts but INFO GLOBE has been used with general level learners with success. Because of cost, only one project a year would likely be supported in this way.

b) menu driven data bases (TELIDON)

Menu driven data bases are more likely to be encountered by students of general level courses. Public information sources are already available in shopping malls or libraries. Specific use of these data bases could be incorporated in class activities.

Soon software which allows students to set up their own data bases or the teacher to set up a data base for a course will be available. Since the accessing and use of information is going to be so important to society, geography teachers should attempt to incorporate such data bases in their courses.

(4) SURVEY — This a program which allows students to set up a series of questions to be presented by the computer to a series of respondents. The results are totaled and presented at the end of the survey. Available for PET from Peel Board of Education, Ontario, attention Jo Ann Wilton.

(5) Graphing and mapping software are now becoming available for most machines. These are usually commercial programs and none are specifically recommended here.

(6) Some isolated statistical programs exist for geography use but in most cases are for senior advanced students. A comprehensive statistical package which will include simple analysis tools is being considered for publication by Prentice-Hall to accompany a current geography textbook.

(7) These two types of programs (see above) are currently under development and hopefully will be made available to the geography community in 1984.

(8) Simulations for Analysis

   a) Open-pit Mine, Niagara Farmer, Gusher — Toronto Board of Education — attention of Gordon McKye

   b) Minerology Test — David Cloute — Centennial Collegiate, Guelph.

(9) a) Energy Model is under development as a Ministry of Education project in Ontario through Oxford Press. It is not available yet.

   b) Three Mile Island — Apple — Minnesota Educational Computing Consortium.

(10) Josef, a new language which has been developed by Dr. Ivan Tomek of Dalhousie University, Nova Scotia, will be translated to standard microcomputers during 1983. The language has the potential to bring Logo-like creative environments to spatial problem-solving.

(11) Language processing (word-processing)

   a) Word Pro — PET — Commodore dealers

   b) Paper Clip — PET — Batteries Included, Toronto

   c) Story Writer — enhanced print for posters or questionnaires
   — Toronto Board of Education

   d) Scriptist — TRS-80 — Radio Shack

   e) Magic Window — Apple — commercial dealers